FEBRUARY 1952

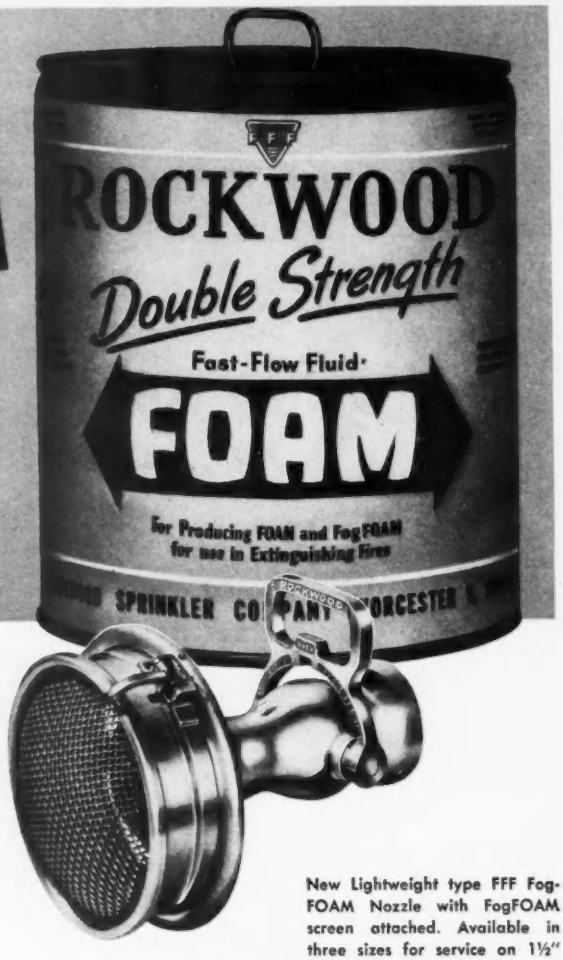
FIREMEN

FIFTY-SIXTH YEAR · NATIONAL FIRE PROTECTION ASSOCIATION

VOLUME 19, NUMBER 8, COPYRIGHT 1952 NATIONAL FIRE PROTECTION ASSOCIATION PRINTED IN U. S. A.

3 better ways to fight fires...

ALL WITH ONE NOZZLE



1 Fog FOAM
2 Solid FOAM stream
3 High Velocity WaterFOG

Rockwood *Double Strength* FOAM Liquid used thru Rockwood FFF FogFOAM Nozzles enables fire fighters to cover burning surfaces with a blanket of FOAM faster and more efficiently. The 3 methods — 1. FogFOAM, 2. Solid FOAM Stream and 3. High Velocity WaterFOG combined in the one FFF FogFOAM Nozzle will give you a *better weapon* for extinguishing and controlling fires in gasoline and other flammable liquids and materials.

Rockwood FOAM Liquid and FogFOAM Nozzles are now being used to fight large running gasoline fires and spill fires in oil refineries, fires in oil storage tanks — or for crash-rescue fire fighting at airports and also for municipal and industrial fire fighting requirements. All these hazards require special proportioning systems for discharging the FOAM Liquid. Custom engineered proportioning systems to meet such unusual requirements is a Rockwood specialty. For complete data and prices write today.

Remember, the most efficient way to apply Rockwood FOAM Liquid and Wetting agent to most fires is thru Rockwood fire fighting devices.

New Lightweight type FFF FogFOAM Nozzle with FogFOAM screen attached. Available in three sizes for service on 1½" and 2½" or 3½" hose.

(1.) Thru the FogFOAM screen a wide pattern of FogFOAM can be applied directly to the burning gasoline without harmful agitation to the surface. This means faster and more efficient extinguishment of fire. FogFOAM screen can easily be attached or removed.

(2.) Thru FOAM shaper a solid FOAM stream can be projected to reach fires at considerable distances. FOAM Shaper can also be easily attached or removed.

(3.) If FOAM Liquid supply is exhausted, the Rockwood FFF FogFOAM Nozzle will discharge a wide pattern of *High Velocity* WaterFOG.

ROCKWOOD
SPRINKLER COMPANY
88 HARLOW STREET
WORCESTER 5, MASS.

PORTABLE FIRE PROTECTION DIVISION

Chief T.P. Treadwell of Fort Collins, Colorado

(Winner of 1st place in fire prevention in cities of less than 20,000)

SAYS:

"INDIAN FIRE PUMPS are an indispensable fire fighting tool!"

Our congratulations to Chief Treadwell and his highly efficient department for their splendid performance. Shown below are members of Engine Company No. 1 with their INDIAN FIRE PUMPS.

Do you have an ample supply of these famous back pack extinguishers?

We are particularly pleased with the part INDIAN FIRE PUMPS have played in enabling the city of Fort Collins, Colorado to win these outstanding awards for fire prevention:

1950 1st place in U.S. in cities of less than 20,000—U.S. Chamber of Commerce.

1950 2nd place in U.S. cities of all sizes—Fire Underwriters Contest.

1949 3rd place cities of all sizes.

1947 National Grand Award in the U.S. in cities of all sizes.

16 consecutive years among the top 10 cities in the U.S. in fire prevention.

HAVE YOU ORDERED

INDIAN FIRE PUMPS

For Civil Defense? Be Prepared!

Send for circular telling all about INDIAN FIRE PUMPS

D. B. SMITH & CO.

408 MAIN ST.
UTICA 2, N.Y.

PACIFIC COAST BRANCHES:

Hercules Equipment & Rubber Company, Inc.
435 Brannan Street
San Francisco 7, California

Roy G. Davis Company
617 East Third Street
Los Angeles, California

Fred E. Barnett Company
2005 S. E. 8th Ave.
Portland, Oregon

Fred E. Barnett Company
600 Spring Street
Klamath Falls, Oregon

Titan Chain Saws, Inc.
2700 Fourth Avenue South
Seattle, Washington

L. N. Curtis & Sons
426 West Third Street South
Salt Lake City, Utah

CANADIAN AGENTS:

Fleck Bros. Limited
110 Alexander Street
Vancouver, B. C., Canada

C. E. Hickey & Sons, Ltd.
Hamilton, Canada

IT PAYS TWO WAYS TO BE PROTECTED *Automatically* BY ADT, SAY LEADING WAREHOUSEMEN

Redman Van & Storage Company, Salt Lake City, is among the leading warehouse organizations and other business establishments enjoying greater security at less cost through use of ADT *Automatic* Protection Services.

Of fire-resistive construction, the Redman warehouse is further safeguarded against fire by ADT Central Station Aero Automatic Fire Alarm Service. In addition, ADT Central Station Burglar Alarm Service provides protection against unlawful or unauthorized entry.

These and other combinations of ADT *Automatic* Protection Services make it possible for thousands of concerns to effect substantial savings through elimination or modification of other less effective but more costly protection measures.

Write us for further information and details.

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH COMPANY
155 Sixth Avenue, New York 13, N. Y.
CENTRAL STATIONS IN ALL PRINCIPAL CITIES

ADT

Firemen

Volume 19 — Number 2

WARREN Y. KIMBALL — EDITOR
PAUL R. LYONS — ASSOCIATE EDITOR
HENRY S. GERE — ADVERTISING MANAGER

Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION

A VOLUNTARY NON-PROFIT ORGANIZATION
60 BATTERYMARCH ST., BOSTON 10, MASS.

PERCY BUGBEE — GENERAL MANAGER
CHARLES S. MORGAN — ASSISTANT GENERAL MANAGER
ROBERT S. MOULTON — TECHNICAL SECRETARY
HORATIO BOND — CHIEF ENGINEER

Contents for February 1952

	Page
Winners of the 1951 Fire Prevention Week Contest	6
There's Safety in Fire Alarm Box Numbers, by Albert Lee O'Banion, Superintendent, Fire Alarm Division, Boston, Massachusetts	8
Making a Good Job of It, by Warren Y. Kimball	10
NFPA Member Departments	12
Oregon's Fire Defense Plan, by Jack A. Hayes, Director, Oregon State Civil Defense	13
Fatal Fargo Hotel Fire	14
Civil Defense Fire Apparatus, by Kyle P. Laughlin, Director, Fire Services Division, U. S. FCDA	16
Building a Fire Brigade, by Chief Al Crowe	20
Operating Pumpers	21
Scientific Fire Protection in Britain	22
Items in the News	23
Deaths and Property Damage from Fire in 1951	24
Eighth Annual Arson Investigators' Seminar	24
Fire Prevention and Accident Yearbook — 1952	25
Coming Events	25
Washington Classifies Lightning Rods and Fire Escapes as "Ornamental Ironworks"	26
USAF Crash Truck	28
Fire Training Film	28
Civil Defense on TV	28
Membership Report	30
Employee Organization for Fire Safety	31
"Water vs. Fire"	31
What's New in Fire Equipment?	32

Important Meetings

Readers of FIREMEN should watch for further announcements of three important meetings that will take place in the coming year. During the week of June 9–13 the NFPA will hold its 56th Annual Meeting at the Hotel Statler in New York City. August 25–28 will witness the 79th Convention of the International Association of Fire Chiefs in Boston, Massachusetts, with the Hotel Statler as headquarters. Then on September 28 and 29, and October 1 and 2, the International Municipal Signal Association will also hold its meeting in Boston with the Hotel Statler as headquarters. Further details on these meetings will be published as soon as they are available.

Associated Press Newsphoto

Cover Picture

The "stairway" of exposures shown on this month's cover (*Acme*) was part of the large loss fire that occurred at Atlantic City, New Jersey, on January 7. Damage was estimated in the vicinity of $2,000,000.

Fire started in the Congress Hotel, a seven-story, 150-room frame structure. A 40-mile-per-hour shifting wind helped to involve close exposures and a "general alarm" resulted. More than 400 fire fighters worked in sub-freezing temperature for four hours before the fire was brought under control.

Altogether three hotels, twelve rooming houses, a row of stores, and a theatre were destroyed. The entire frame west wing of the twelve-story St. Charles Hotel (at extreme left of cover picture and picture above) was badly damaged. Fire doors helped to protect the other wing.

Generally the wind blew towards the boardwalk (running diagonally at upper left of picture above) and fire fighters were able to make a good stop in that vicinity. States Street, in the path of the spreading fire, constituted a fire break of about 125 feet and control was established in this vicinity.

Car Stickers for Ohio Volunteers

A bulletin from Ohio State Fire Marshal, Harry J. Callan (NFPA Member), calls attention to an important section of the Ohio General Code. Under Section 6307-2, paragraph 5, stickers are required as identification for volunteer firemen's vehicles. It is a further requirement of Ohio Law that each volunteer fireman's car shall bear a siren (whistle or bell), of a type approved by the Director of Highways, before such vehicles can be classed as emergency vehicles.

Each chief of Ohio volunteer fire departments should take steps to register the cars of his firemen and obtain stickers for them so that they may operate as emergency vehicles. Requests for the stickers should be addressed to Col. George Mingle, Superintendent, State Highway Patrol, 1117 East Broad Street, Columbus, Ohio. Requests should not be directed to the office of the State Fire Marshal.

Winners of Prevention

Contest sponsored by the NFPA Fire Prevention excellence of many cities' year-round Indiana, and Ottawa, Ont

GRAND AWARD! **Fort Wayne, Indiana,** led all United States municipal entries with a thorough report of extensive fire prevention work contained in these attractive five volumes.

(Right) The Fire Prevention Committee of the Fort Wayne, Indiana, Fire Department.

Winning Municipal Entries in the United States are represented by these reports. First place awards went to these cities: Class I (Population 500,000 or over), Chicago, Illinois; Class II (Population 250,000 to 500,000), Louisville, Kentucky; Class III (Population 100,000 to 250,000), Fort Wayne, Indiana; Class IV (Population 50,000 to 100,000), Alameda, California; Class V (Population 20,000 to 50,000), Tuscaloosa, Alabama; Class VI (Population under 20,000), Atlantic, Iowa. Special recognition was awarded the Evanston, Illinois, Township High School and the P. J. Jacobs High School, Stevens Point, Wisconsin, for the excellence of their fire prevention education programs.

FIRE losses of life and property can be reduced by effective fire prevention programs. This fact was emphasized by the contents of reports submitted as entries in the 1951 Fire Prevention Week Contest sponsored by the NFPA Fire Prevention and Clean-Up Committee.

Two Grand Award winners were chosen among municipal entries. Fort Wayne, Indiana, and Ottawa, Ontario, led the fields in the U. S. and Canada, respectively. The General Electric Works in Fort Wayne won the honors in the Industrial Division of the contest, while the Government classifications were led by Fort Bragg, North Carolina, U. S. Army; Westover Air Base, Chicopee Falls, Massachusetts, U. S. Air Force; and the Naval Supply Center, Oakland, California, U. S. Navy.

A TOTAL of 2,164 entries were received of which 1,076 were from cities and towns in the United States, Alaska, and Hawaii; 614 from municipalities in Canada, 54 from U. S. and Canadian industry; 247 from the U. S. Navy; 105 from the U. S. Army; 66 from the U. S. Air Force; one from the U. S. Veterans Administration, and one from the U. S. Atomic Energy Commission.

The reports submitted ranged in

First place winners in the Government Division of the contest are represented by the above reports. (Left to right) Fort Bragg, North Carolina, U. S. Army; U. S. Naval Supply Center, Oakland, California, Westover Air Base, Chicopee Falls, Massachusetts, U. S. Air Force.

First Place in the Industrial Division went to the General Electric Works, Fort Wayne, Indiana. The Argonne National Laboratory, Chicago, Illinois, placed second, and the Delco-Remy Division of General Motors Corporation, Anderson, Indiana, won third place in this class.

the 1951 Fire Week Contest

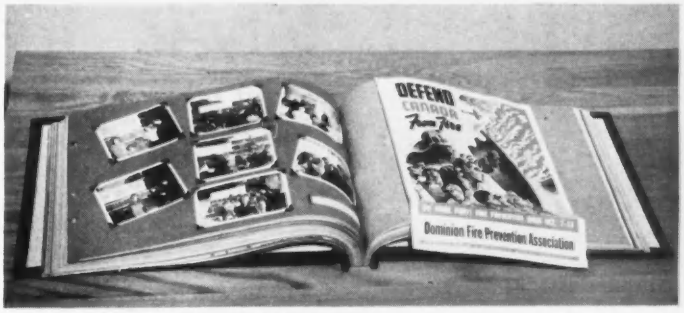
and Clean-Up Campaign Committee highlights fire prevention programs. Fort Wayne, rio, Grand Award Winners.

design from the simple, paper bound manuscript to the ornate multi-volumed pictorial display. While neatness of presentation helped to speed up the judging of the entries, the basis of evaluating the reports was the effectiveness of the individual year-round fire prevention program.

The International Board of Judges was composed of: A. Leslie Ham, Manager, Dominion Board of Insurance Underwriters, Montreal, Quebec; Lewis Vincent, General Manager, National Board of Fire Underwriters, New York City; Chief Rudolph Swanson, President, International Association of Fire Chiefs, Jamestown, New York; and George J. Richardson, Secretary-Treasurer, International Association of Fire Fighters, Washington, D. C.

The best reports submitted by state or provincial fire marshals outlining the scope and results of their programs were filed for the states of Kentucky (by W. L. Martin), Indiana (by Alex Houghland), and Connecticut (by Edward J. Hickey).

The finest county job in the U. S. was turned in by the Montgomery County Department of Public Safety, Division of Fire Protection, Montgomery County, Maryland.

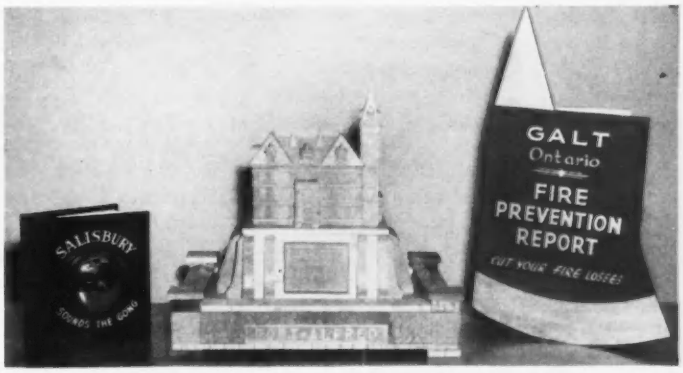


GRAND AWARD! Ottawa, Ontario, led all Canadian municipal entries in fire prevention activities. The report was simply presented in this attractively bound volume.

(Left) Staff of the Ottawa, Ontario, Fire Prevention Bureau and Investigation Branch.

Winning municipal entries in Canada are represented by these reports. First place awards went to these entries: Class A (Population over 100,000), Ottawa, Ontario; Class B (Population 25,000 to 100,000), Hull, Quebec; Class C (Population 10,000 to 25,000), Arvida, Quebec; Class D (Population 5,000 to 10,000), Kenora, Ontario; Class E (Population under 5,000), Kentville, Nova Scotia.

Far-reaching effects of the contest are exemplified by this entry from the front lines of Korea. It was submitted by the K-2 Air Force Base in that country and the fire prevention activities of the members of that unit won third place in the Government Division.



Novel forms of reports were these submitted by (left to right) Salisbury, North Carolina, Port Alfred, Quebec, and Galt, Ontario. While the reports of many cities were ingeniously presented, judgment was based on the scope and effectiveness of the 1951 Fire Prevention week programs. Salisbury and Port Alfred each qualified for honorable mention in their respective classifications.

There's Safety in Fire Box Numbers

By Albert Lee O'Banion

Superintendent Fire Alarm Division, Boston Fire Department, Mass.

This year will witness the celebration of the 100th anniversary of the installation of the first electric fire alarm system in Boston, Massachusetts, on April 28, 1852. During the past century the means of transmitting and receiving fire alarms have kept pace with the growth of industrial centers and other populated areas that require watchful fire protection. Yet a century of progress has not eliminated the serious fires that so often result from "delayed alarms."

In this article Superintendent O'Banion stresses the importance of utilizing the municipal fire alarm as the best means of obtaining prompt fire department service.

Superintendent O'Banion compares a new type building fire alarm box with one of the oldest boxes in the United States on display at Boston fire alarm headquarters.

STATISTICS show that fire strikes at a school somewhere in this nation an average of once every three hours and threatens a hospital once every six hours. This peril to life and property must be reduced. Two steps can be taken to minimize damage.

One is to get the alarm to the municipal fire department as quickly as possible. The other is an immediate evacuation signal and the emptying of the building of pupils or patients by a pre-determined, orderly system and trained personnel.

Public buildings including schools or hospitals should have more inside fire alarm boxes, particularly in small or medium sized cities where the entire protection is up to the municipal department.

In larger cities, private central station companies provide private fire alarm service and take part of the warning burden from the municipal signal system at the start of a fire. The fire alarm is transmitted to the central office of the private company, the location of the fire is established, and the alarm sounded is usually followed by the nearest box.

Any fire chief will agree that the best way to fight a fire is to get there when it is small. The best type of central station, the latest and most efficient apparatus and a high quality and skill in firemen are handicapped by a delay in the sounding of an alarm.

Every school and hospital, however, should have its own local fire alarm system. All Boston public schools have them. Many private and parochial schools do not. Unfortunately there is not a definite law requiring the installation of local fire alarm systems in many municipalities in the United States.

The public schools in the City of Boston have fire alarm boxes connected to city circuits and all but a few of the smallest have fire alarm systems with auxiliary stations.

Hospitals in Boston, because of a fatal fire a quarter of a century ago when a telephone alarm went wrong, have good protection "beyond the curb." Boston City Hospital is a good example of this.

All floors on all buildings of this hospital have auxiliary boxes. Pulling of any one of these will trip one of four master alarm boxes. This activates a special circuit which gives the fire alarm office the building and floor from which the alarm was sent. This information is transmitted to the department.

WARNINGS from private central station services such as ADT come in similarly. They are sent to the municipal fire alarm headquarters and then confirmed by telephone. The fire alarm office transmits the special preliminary signal and box number assigned to the subscriber. In Boston one engine company, a ladder company and a chief go to the address. This is usually followed by the nearest city box, which brings the full box assignment for the district.

Recently a new type fire alarm box for private buildings has been produced by the Edwards Company of Norwalk, Conn. This can sound an evacuation alarm in the building — and also transmits a signal to a fire alarm office.

In this city, about one-third of the fire alarms each year come in by telephone. In my opinion that percentage is too high. Telephone calls may cause delay and possible mistakes. "Don't phone — pull the hook" where there is a municipal fire alarm system, should be part of the public's education.

BOSTON had the first electric fire alarm system in the world in 1852 with the Samuel Morse prin-

ciple of telegraphy applied to fire warnings by Dr. Channing and Prof. Moses Farmer. In 1952, some 2,500 representatives of International Municipal Signal Association and International Association of Fire Chiefs will meet in Boston for a 100th anniversary celebration.

The quickest and most dependable way to call apparatus to a definite location is the fire alarm box. It tells everything necessary.

It's quick. It takes but three to nine seconds for the box alarm to sound on fast time of three blows a second — three seconds for a two-digit box — nine seconds for four digits. In about 20 seconds more, apparatus is on the way.

In telephone alarms there is the lapse of time for dialing. There is another lapse of time for answering. It may take seconds or even minutes, especially where the call goes over a party line. It is more likely to require one, two, three or more minutes, compared to 30 seconds for the box alarm. The alarm box is placed in a safe location while a person may endanger his or her life by trying to telephone an alarm from a burning building. Boxes, too, are inspected constantly. Each of the 1850 boxes in Boston, mostly of Gamewell make, is checked and tested every 30 days. No one has to be told about wrong numbers on telephone calls.

Recently the New England Telephone and Telegraph Company included the following advice in their monthly statement to subscribers: "Generally speaking, something like one-third of all fire alarms are placed by telephone. We are glad to be helpful. Nonetheless we echo the sage advice of fire department authorities that, where a regular fire alarm system exists, you should be sure to pull the box. It is as fast, sometimes faster. It doesn't develop hysteria. It pinpoints the location of the fire. Use your telephone if you wish, but regard it as no more than a second string to your bow. Know where your nearest firebox is. Should you have a fire, pull it."

If a telephone alarm is the only practical way — if there isn't a fire alarm box or the sender does not know where it is — dial or call "Operator" rather than the fire department number. It's quicker for the sender than looking up a number, especially where several fire departments may be served by the same telephone exchange. The "Operator" call is supervised and in most cities is flashed over a special emergency line with a red light, gaining preferred treatment over other calls.

The operator can help the department by checking the location from which an excited and incomplete telephone call came. Automatic recording of the incoming call is a more effective means of preventing errors on calls. A telephone message that is recorded can be played back immediately and save the day in cases where the service has been disrupted by the fire. It likewise protects the department from mistakes by persons calling, and subsequent false claims against the city or town.

Radio is a valuable device for fire communication. In Boston, all emergency, rescue, arson and chiefs' cars are equipped with radio, along with some apparatus. But radio tubes can go bad.

Every chief carries a portable telephone, also, to plug into boxes and talk to fire alarm headquarters. Yet a noisy line can prevent satisfactory communication.

The chief can always get his signal through when using Morse code, sending it from the telegraph key provided for each fire alarm box. Boston still uses Morse in testing and fire communication.

Every man in the fire alarm office must be a Morse telegrapher and every chief's driver must know the code. With this Morse training and transmission, communication between chiefs and the fire alarm office is always assured.

With wooden construction in the majority in most cities in the country, "general alarm fires" (fifths in Boston) are more of a peril without prompt detection and quick notification.

The newest apparatus, trained, competent firemen and adequate water and chemical cannot save lives and property if not called immediately.

An adequate number of fire alarm boxes, modern and easy to operate, inside buildings and out, their proper distribution, remain a vital link in the efficient and co-ordinated operation of a fire department.

Here Are Some Important NFPA Publications on Signaling Systems

SINCE 1898 the National Fire Protection Association through its committees has been publishing information to improve the standards of municipal fire alarm installation and service. Readers of FIREMEN may find in the following publications information pertinent to their particular problems in the installation and improvement of their fire alarm services. Copies of the publications listed below may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts.

NFPA No. 71 — Standards for the Installation, Maintenance and Use of Central Station Protective Signaling Systems for Watchman, Fire Alarm and Supervisory Service. 24 pages. Price, Twenty-five cents. Discount for quantities.

NFPA No. 72 — Standards for the Installation, Maintenance and Use of Proprietary, Auxiliary and Local Protective Signaling Systems for Watchman, Fire Alarm and Supervisory Service. 30 pages. Price, Twenty-five cents. Discount for quantities.

NFPA No. 73 — Standards for the Installation, Maintenance and Use of Municipal Fire Alarm Systems. 24 pages. Price, Twenty-five cents. Discount for quantities.

NFPA No. 101A — Fire Exit Drills and Alarm Systems. 22 pages. Price, Twenty-five cents. Discount for quantities. (Reprinted from Building Exits Code.)

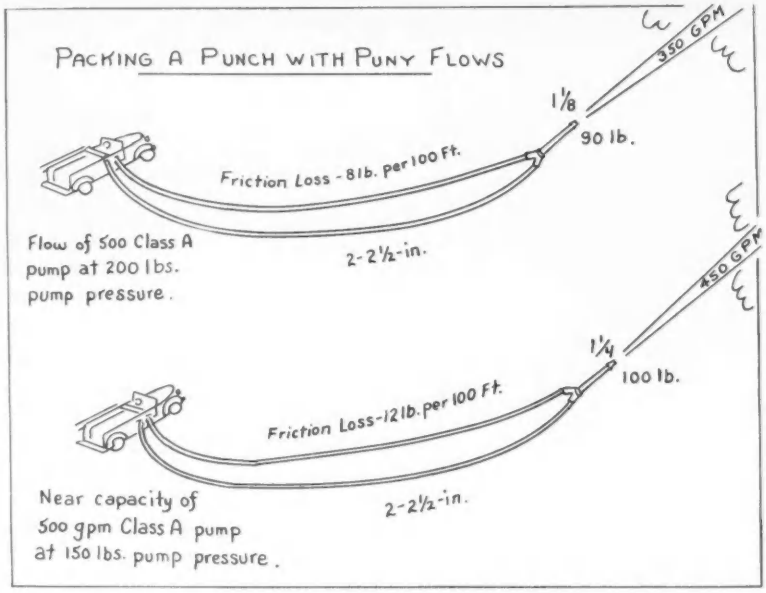
NFPA No. 101 — Building Exits Code. Eleventh Edition, 1951. 136 pages. Price, $1.00 per copy.

National Fire Codes, Volume IV, Extinguishing and Alarm Equipment. Contains 50 standards covering automatic sprinklers and water supply, extinguishers and hose, special extinguishing systems, municipal and rural public protection, alarm and supervisory systems, employee organization and miscellaneous. 848 pages, cloth bound. Price, $4.00.

MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Getting Effective Streams from Limited Water Supplies


PACKING A PUNCH WITH PUNY FLOWS
350 GPM
1⅛
90 lb.
Friction Loss - 8lb. per 100 Ft.
Flow of 500 Class A pump at 200 lbs. pump pressure.
2-2½-in.
450 GPM
1¼
100 lb.
Friction Loss-12lb. per 100 Ft.
Near capacity of 500 gpm Class A pump at 150 lbs. pump pressure.
2-2½-in.

Powerful streams are possible from a 500 gpm pumper either in series or parallel operation. If a 1⅜-in. tip is available a 500 gpm pumper can supply this tip at 80 pounds nozzle pressure.

A SERIOUS error in fighting large fires may be an attempt to obtain larger streams than the water mains can supply. In many cases available fire department pumping capacity is much greater than the supply available from nearby hydrants.

In one big fire involving serious exposures, the first engine company unsuccessfully tried to supply three lines to a gun with the pump connected to a 6-in. main which also supplied sprinklers. In another instance a first due company tried to use two direct hydrant streams from a small main. Both streams were ineffective and the fire spread out of control.

Except in areas served by large water mains, such as the separate "high pressure service" mains in big cities, the safest standard practice for the first engine company arriving at a major fire is to develop the best possible stream from 2½-in. hose. In most cases, even with relatively small mains this is the fastest way to develop an effective stream and to protect exposures.

With pumper pressure enough water for at least one good 2½-in. line is almost a certainty. When this stream is placed in service, observation of the pumper gages will show whether there is enough water for heavier streams.

If the hydrant residual pressure has not dropped more than 10 percent, there will be enough water for at least two more lines. If the incoming pressure drops more than 25 percent there may be only enough water for one more line at best.

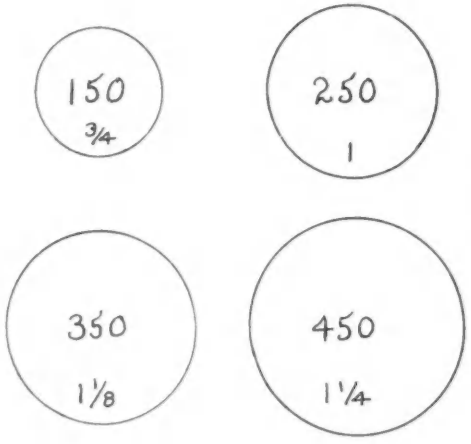
In the meantime, however, the first company can be protecting exposures and the best decision can be made for using the limited water available.

Relating Size of Stream to Size of Main

WISHING does not "make it so" on the fire ground. If the fire department is fighting a fire from hydrants supplied by 4- or 6-in. mains (not strongly looped), it may be advisable to use relatively small nozzle tips so that streams with effective nozzle pressures may be developed. For example, in general not over 1⅛ or 1¼-in. tips should be first used on streams from 6-in. mains. The ¾- or 1-in. tips are the largest that should be used from 4-in. mains, and in many cases smaller streams should be used.

At serious fires a small nozzle tip with good pressure may give better service than a large tip poorly supplied.

If, after getting these streams in service, it is found that more water is available and can be used, it would be good practice to set up one or more heavier streams to better utilize the supply. It is possible that two or more pumpers may try to take water from the same main. They must share the supply or neither may develop effective streams.



Flows with small nozzle tips at high pressure.

For high-pressure streams the flows from nozzle sizes illustrated can be thought of in round numbers. As illustrated a left a ¾-in. tip can suggest at 150 gpm flow; while 1-in., 1⅛-in. and 1¼-in. tips suggest 250, 350, and 450 gpm respectively.

WHERE water supplies are limited by small mains what are the most powerful streams we can obtain?

If we are talking in terms of maximum effective pressure and reach with small volume we may want pressures from 60 to 90 pounds. These lines will not be mobile and must be properly secured. With some nozzles the streams may tend to break and feather.

Here are the flows with various nozzle tips for 2½-in. lines at relatively high nozzle pressure. Normal nozzle pressures for solid streams from hand lines are in the 30 to 50 lb. range:

Nozzle Pressure	Tip Sizes and Flows in GPM			
	¾	1	1⅛	1¼
60	127	229	290	357
80	147	264	335	413
100	165	295	374	461

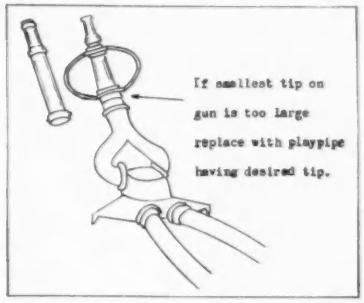
The selection of tips should be made with the knowledge that sufficient water is available. If only 150 gpm is available for a stream this would permit only 15 lbs. nozzle pressure if a 1⅛-in. tip is used, and only 28 lbs. nozzle pressure if a 1-in. tip is used. But if a ¾-in. tip is employed the nozzle pressure can be 83 lbs. with this quantity of water.

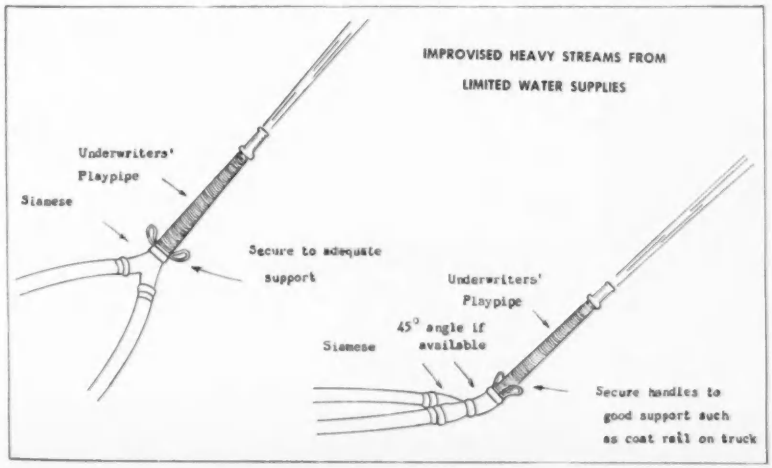
Another advantage of using smaller tips is that even with the somewhat greater discharge at higher pressures, the flows are relatively small and friction losses in the hose are kept down. This is important where long lines must be employed. With 80 to 100 lbs. nozzle pressures the following approximate friction losses can be expected.

Tip Size	GPM	Friction: Single 2½-in. Line		Friction: Dual 2½-in. Line	
		100 ft.	500 ft.	100 ft.	500 ft.
¾	150	6	30	..	..
1	250	15	75	..	..
1⅛	350	28	140	8	40
1¼	450	50	..	12	60

Thus any fire department can develop fairly heavy streams from only moderately good water supplies. The number of streams and nozzle sizes must be kept within the ability of available water main and pumper capacities. Of course, where large mains are provided near big fires, nozzle tips of 1½ to 2¼ inches, supplied by two to four hose lines, should be employed as needed.

Heavy stream devices, pipe holders or other means of securing lines should be employed on any lines where the nozzle pressure is expected to exceed 60 lbs. and which are expected to be used for any considerable period of time. Where the smallest tip with a heavy stream device is too large for the available flow it should be removed and replaced with a playpipe or shut-off nozzle having the tip size required.




IMPROVISED HEAVY STREAMS FROM LIMITED WATER SUPPLIES
Underwriters' Playpipe
Siamese
Secure to adequate support
Underwriters' Playpipe
45° angle if available
Siamese
Secure handles to good support such as coat rail on truck

Westfield, Massachusetts, Fire

From a report by Chief J. A. Moriarty, Westfield Fire Department

FIRE in this building apparently had a good start before discovery. On the evening of January 6 flames suddenly involved the fourth and fifth floors and an alarm was transmitted to the Westfield Fire Department. A general alarm called mutual aid from the cities of Springfield, West Springfield, Agawam, Southwick and Holyoke. Before control was established six people were missing, and an estimated million dollars' damage had resulted.

The five-story brick building was of second class construction. It contained stores, offices, apartments, a dance hall and bowling alleys. The fire had such a rapid start that many people were trapped in the upper floors. Good ladder and rescue work saved most of these people. However, collapse of the roof and walls put an end to rescue work. Six people were believed to have perished.

The Westfield Fire Department responded with a 750 gpm pumper, three 500 gpm pumpers and a 75 ft. aerial ladder. Mutual aid response included 8 pumpers and 2 75-ft. aerial ladders.

A total of 7 ground guns, 2 ladder pipes and 10,000 feet of hose were used.

Control was established at 4 A.M. on January 7. Building was a total loss. Snow and ice in the area helped in the controlling of exposure fires.

Oregon's Fire Defense Plan

By Jack A. Hayes, Director of Oregon State's Civil Defense

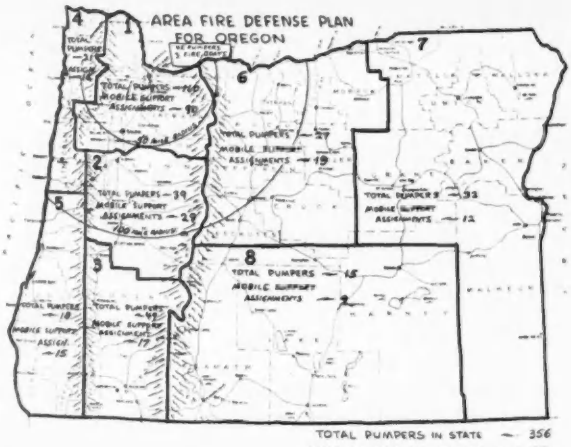
From an address given at the 24th Fire Department Instructors' Conference at Memphis, Tennessee, January 8–11.

THE fire defense plan created under Oregon legislation in substance gives the governor of that state power to order any fire-fighting equipment and personnel to any part of the state in time of "grave fire danger." All costs attendant upon such movement are paid from the state's emergency fund. The state fire marshal directs the movement of equipment and manpower. The working plan has been used not only for civil defense preparation but also for regular and forest fires.

To meet the manpower needs of a major fire emergency, many fire departments in Oregon have trained auxiliary groups of fire fighters. This group, from McMinnville, has two regular paid fire fighters, with the rest being volunteers. This group mans an oil tank truck equipped for fire fighting.

Packaged fire units of portable pump, hose, fog nozzle and two water tanks are ready to stand in for regular pumpers sent on mutual aid calls.

Two men can easily load the portable emergency pumping units onto trucks. The units are available at all times for fire fighting. (At right) Here is the fleet of emergency trucks at McMinnville. These could be used as mobile support to cover regular apparatus.



Map showing the area fire defense plan of Oregon. In the event of a major fire first alarm response would be by local units, second alarm response would be by county organizations, third alarm would bring area response and fourth alarm operations would be under state control. County defense organizations, with all chiefs and departments participating have been organized under the defense plan. These organizations have merged into an area defense organization.

DISPERSAL POINT #1

Located at Eng.18 (Multnomah) 7780 S.W. Capitol Hwy. at SW 35th Ave.

First Alarm:	Resp.Depts.	No.of App.	Estimated Manpower
	Portland (Eng.4)	1	18
	" (Eng.5)	1	9
	" (Eng.10)	1	15
	" (Eng.18)	4	40
	" (Eng.22)	1	18
	" (Trk.2)	1	18
	" (C-2)	1	6
	*(Reserve App.& Men)	2	100
	Totals	12	224

Second Alarm:	Resp.Depts.	No.of Units	Estimated Manpower
	West Linn #1	1	10
	" " #2	1	10
	" " #3	1	10
	First Alarm	12	224
	Total on 2nd Alarm	15	294

Third Alarm:	Resp.Depts.	No.of Units	Estimated Manpower
	St. Paul	1	10
	Dayton	2	20
	Carlton	2	20
	Second Alarm	15	294
	Total on 3rd Alarm	20	304

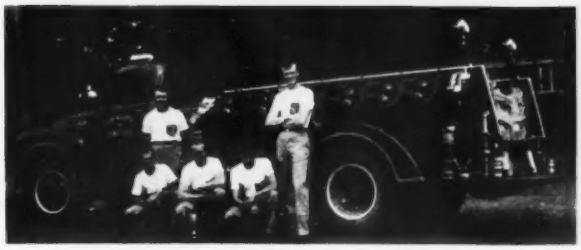
Fourth Alarm:	Resp.Depts.	No.of Units	Estimated Manpower
	McMinnville	4	40
	Amity	1	10
	Sheridan	3	30
	Willamina	1	10
	Dallas	4	40
	Monmouth	1	10
	Independence	1	10
	Falls City	1	10
	Valsetz	1	10
	Corvallis	6	60
	Third Alarm	20	304
	Total on 4th Alarm	43	534

Gen.Alarm — Would include all the above plus any other help obtainable.

Typical Assignment for One Dispersal Point

Assembly points have been designated in Portland. In the event of grave fire danger in that metropolitan area all first line pumpers in the vicinity will be moved into the fire area. Then smaller numbers of pumpers will be moved from remote areas to cover for the mobile units. There are regular assignment cards designating the apparatus to be moved and apparatus to cover.

NFPA Member Departments



Chemainus Volunteer Fire Department, Chemainus, British Columbia

SHOWN above are members of the competition team of the Chemainus Volunteer Fire Department. This group won the Allen Cup Event, as well as another first and two second places out of five events on Labor Day, 1951. The competitions, sponsored by the Vancouver Island Fire Fighters' Association, were held at Oak Bay.

Chief A. E. Knight, standing at right, heads the Department consisting of 20 members, including 13 active fire fighters. Other members of the group above are: (left to right): M. Rubynuk (standing at left), Secretary W. A. Fyffe, G. Ledingham, and Deputy Chief R. Millard. Also shown is the Department's 500 gpm Bickle-Seagrave pumper. Chemainus also has a John Bean high-pressure unit and a 150-gallon Bickle trailer. Apparatus is housed in a two-unit station with a maintenance room, hose tower, recreation room, kitchen and shower. Territory protected includes Chemainus with a population of 3,000, and outlying area. Funds are raised by taxes and social functions. The Department holds weekly training and participates in the Provincial Training Program.

Oregon City Fire Department Oregon City, Oregon

CHIEF Roscoe Locke and Assistant Chief Harold Koenig head this department. Other officers include President A. Westwood and Secretary H. Bottomiller. There is a total membership of 40, including 35 active fire fighters.

The department protects a community of 7800 population and serves nearby rural districts on mutual aid calls. Apparatus consists of 2 pumpers, a ladder truck and a hose wagon. A 75-ft. aerial ladder truck is soon to be acquired. There is also a rescue squad equipped with 2 inhalators, dragging equipment, life preservers and other first aid equipment.

Members have a continual training program and participate in the Oregon State Training Programs.

Panama Fire Department, Panama Oklahoma

THIS volunteer fire department has 15 active members and is headed by Chief O. K. McGoveran and Assistant Chief Author I. Richards. It protects a community of 1400 population in a residential district. Special hazards in the district are a wood preserving plant and a planing mill.

North Adams Fire Department North Adams, Massachusetts

CHIEF Arthur A. Girard heads this paid department of 33 active members. The position of Assistant Chief is filled by one of four Captains, depending upon which is on duty. The Department protects a community of more than 20 square miles in area with a population of 22,500. Textile and printing plants, shoe factories and condensor factories constitute special hazards.

North Adams has 3 engine and 2 truck companies. Apparatus consists of an aerial ladder, a service truck, two 750 gpm pumpers, a 600 gpm pumper, and a chief's car. The Department expects delivery of a new 750 gpm Seagrave pumper in April.

Members of the engine companies act as a rescue squad, and have two E & J resuscitators and other first aid equipment. Training consists of Massachusetts State Training Programs and special training by the officers of the Department.

Monte Vista Fire Protection District, Ontario, California

MONTE VISTA was the first fire protection district in California to have its fire station and equipment purchased by bond election, according to a report by Chief W. A. O'Hara of this District. A sum of $50,000 was voted to finance the initial cost of the one story, concrete block station, with four truck stalls and living quarters for the crew on duty. Maintenance and other costs come from the taxes collected from the District by San Bernardino County.

Chief O'Hara and Assistant Chief W. W. Costes head the department of 14 active fire fighters. The District is approximately 9 square miles in area and has a residential section and a small manufacturing section. Hazards consist of 4 bulk gasoline plants and 2 citrus packing plants.

At present apparatus consists of a high-pressure unit, a 500 gpm pumper, and a pickup-patrol truck with a high-pressure pump. The District plans to purchase a 1000 gpm pumper.

The high-pressure unit is equipped with Scott Air-Paks, an E & J dual resuscitator, portable welding and cutting equipment, a trailer, and an air compressor.

"Don't worry folks. We always get off to a slow start!"

Fatal Fargo Hotel Fire

Photos and plans through courtesy of Chief Fred Wells, Fargo Fire Department.

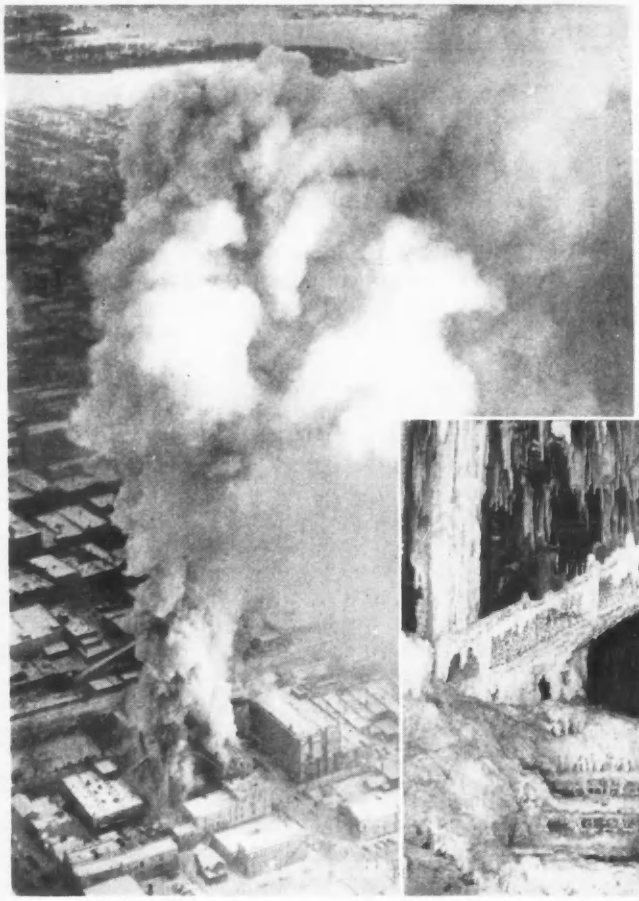
ONE of the toughest fire fighting assignments of the current winter was faced by the Fargo, North Dakota, Fire Department, headed by Chief Fred J. Wells (Member NFPA Committee on Firemen's Training), when flames swept the huge Earle Hotel on December 13, 1951.

Three lives were lost in this blaze which had great headway when discovered at 7 A.M. Temperature during the day averaged 14.8 degrees below zero F. This was the second serious fire in this hotel during 1951, and several of the persons trapped had been rescued in the previous fire. The hotel was built in 1909 prior to the enactment of modern building codes.

Fire started in a third floor guest room, possibly due to wiring overloaded with various electrical appliances. Two women and one man lost their lives despite strenuous rescue efforts on the part of the fire fighters. One of the women had been taken to safety but had dashed back into the building to get some personal belongings. One of the walls of the hotel fell outward from the fifth to the second floor level shortly after fire fighters had gone to work.

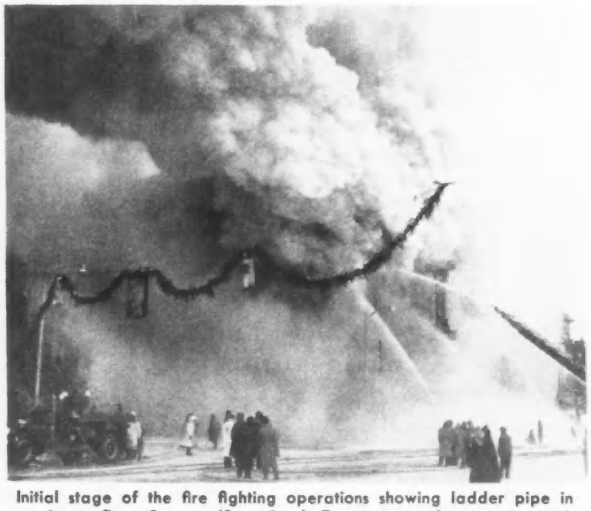
Five large capacity pumps supplied five turret, ladder pipe, and water tower streams in addition to supplying seven hand lines.

Diagrams on opposite page illustrate two phases of apparatus placement during the fire. Unless otherwise specified all lines in use were of the 2½-in. size.

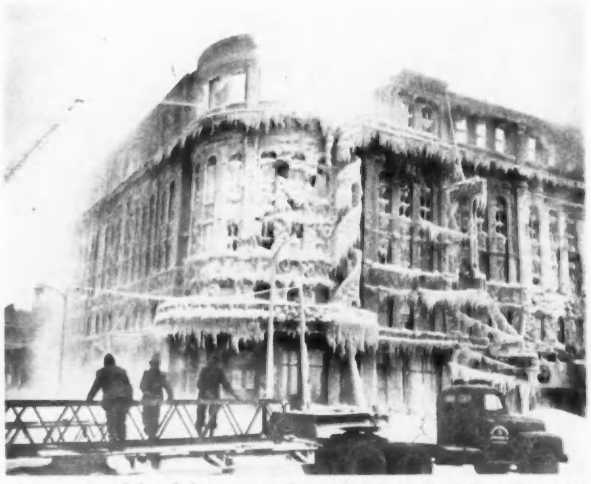


The thermal updraft from this intense blaze lifted a huge column of heat and smoke high into the air over Fargo. Wind changed direction to follow spread of fire through block. "Flattening" of upper portion of smoke column occurs as atmospheric ceiling is reached. Snow and ice undoubtedly helped in limiting spread of fire to exposures but the Fargo Fire Department deserves credit for a good stop despite hazardous conditions.

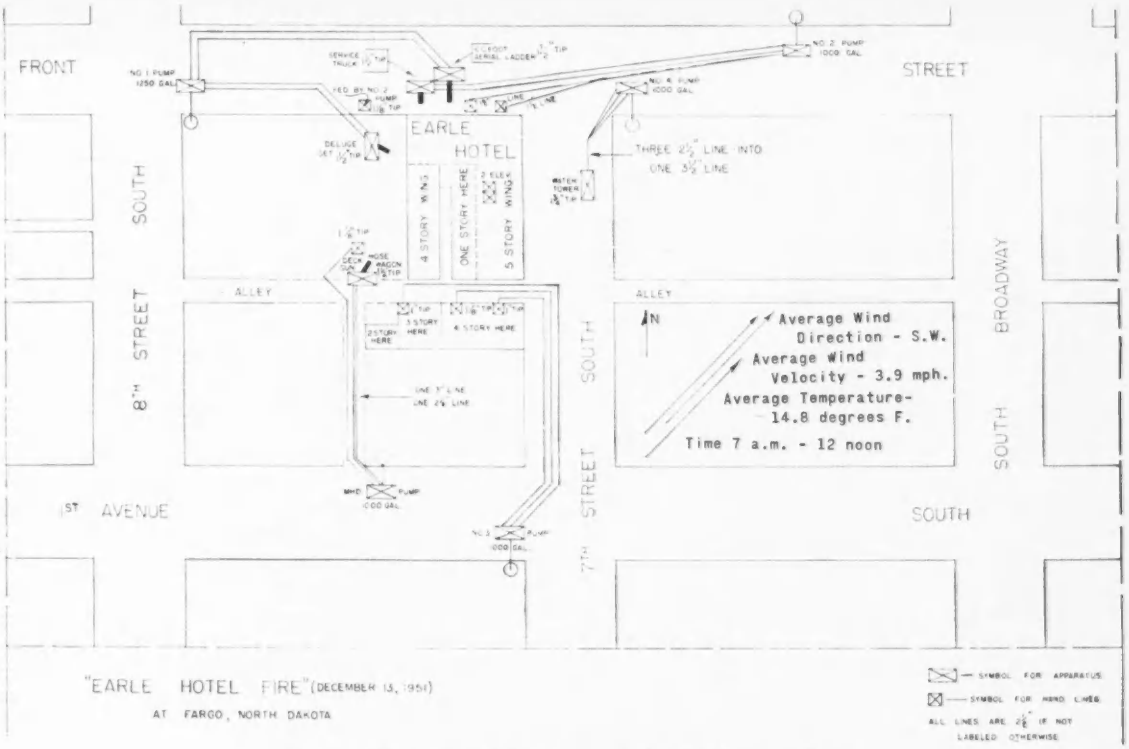
The fourth floor level of the Earle Hotel after streams from ladder pipes and water towers had done their work in minus 14 degrees F. temperature. After the initial stages of the fire hand lines were used principally for protecting exposures while heavier streams maintained their attack upon the burning hotel. As diagrams show, progress of fire and structural failure of involved building necessitated cautious placement of apparatus.



Initial stage of the fire fighting operations showing ladder pipe in service on Front Street. (See plan.) Turret stream from service truck largely hidden by aerial. Apparatus was moved after building began to collapse.

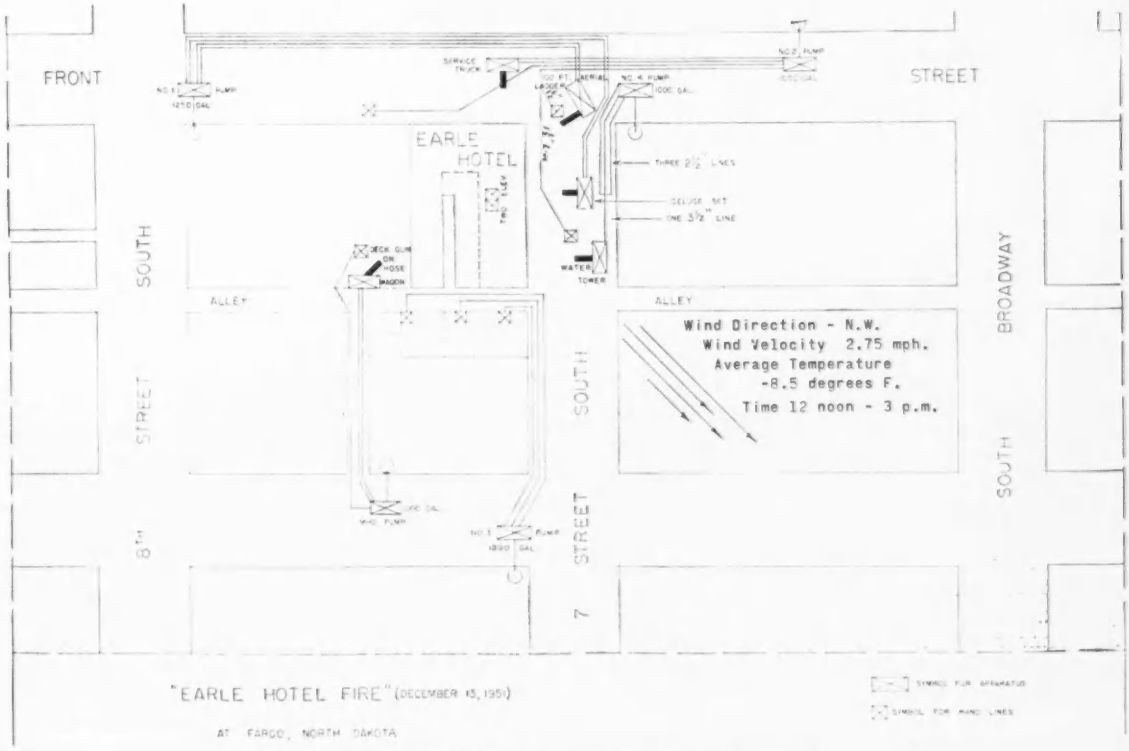


Late stage of fire fighting operations after blaze had been brought under control. Tower aerial ladder in service on 7th Street but some of the streams shown in the plans have been shut down. Note wrecking truck used to demolish parts of upper floors.



Plan of Placement of Apparatus in Initial Stage of Fire

Scale — ¾ in. equals 100 feet



Plan of Second Phase of Fire Apparatus Placement

Scale — ¾ in. equals 100 feet

Civil Defense Fire Apparatus

The Official Statement on the Basis Used for Estimates of Firemen Manpower and the U. S. Matching Funds Program on Fire Apparatus.

By Kyle Laughlin, Director

Fire Services Division, U. S. Federal Civil Defense Administration

WE have asked ourselves how much we need in the way of equipment and personnel to fight the kind of fires anticipated from enemy attack. We have realized that no exact answer is possible when we do not know the specific details of the weapon that may be used against us; when we do not know the targets that will be hit; and when we do not know the many variable conditions which can exist at the time of attack.

420 Pumpers Per A-Bomb

However, to provide a guide for adequacy or practical sufficiency, we have suggested that 420 pumpers with complement of hose, tools and accessories would be necessary for each atomic bomb burst on a major American city. This number of pumpers would provide about 750 gallons per minute every 150 feet around a perimeter of approximately 12 miles. This perimeter was estimated to be the periphery of the major and complete bomb damage area around ground zero. There would be little chance of fighting fires within the completely damaged area if indeed access to those fires were possible, but the plan would be to contain the fires at a distance from ground zero where fire fighting is possible and where blast damage is not complete.

Support Radius: 100 Miles

TO bring such forces to play on such a contemplated fire would involve the support of areas around the stricken city. We have chosen a 100-mile radius as the distance in which we would expect the support of approximately 420 pumpers. We further realize that the communities within this 100-mile area could not be left unprotected at any time, and so we have assumed that a maximum of 50 percent of the equipment in such areas might be made available for fire fighting in the stricken city.

For example: If city "X" had a hundred pumpers available and there were 400 pumpers located in the hundred mile area, we would theoretically have 300 pumpers available to city "X" in case of disaster. This would be obtained by adding 100 pumpers in the city to 50 percent of 400, or 200 pumpers in the surrounding area. As the difference between 300 and 420 is 120, this figure was used as the basis for need for that target city.

By using all of the inventory data we had available, we estimated the needs of many of the target cities and struck an average. This gave us a figure for total deficiencies within the country, and formed the basis for our original and continuing request to Congress for appropriations to meet these deficiencies. The use of such a large number of pumpers in any target city would of course be dependent on the estimated water supplies available both primary and secondary.

U. S. Funds Available: $2,250,000

A total of two million and two hundred and fifty thousand dollars has been made available for organizational equipment for the Fire Services on a matching fund basis. In other words, with 50 percent sharing of the cost, equipment valued at four and one-half million dollars can be acquired. The distribution of presently available funds will be made in the ratio which the urban population of the critical target areas in each State bears to the total urban population of the critical target areas of all of the States.

WE believe that the best all-around piece of equipment for the civil defense emergency is the 750 gpm, Class A pumper, with double-jacketed standard type 2½-inch hose, and a standard complement of small tools and accessories. Specifications for this type of equipment conform to the recognized peacetime standards.

CD Law Limits Use

Public Law 920 states clearly that organizational equipment shall not be used in combating local disasters, except when required in unusual quantities. This excludes the acquisition and use of such material for normal peacetime activities. It further excludes the use of the equipment to replace old or worn-out equipment. It excludes support for the acquisition of equipment in small isolated communities beyond possible support range for critical cities. While the equipment is designed primarily for civil defense emergencies, it will be available for training of civil defense volunteers, and it may also be used for non-civil defense purposes to the extent prescribed by the Administrator. In this connection, the Administrator has prescribed that it may be used on combating multiple alarm fires, and in preventing the destruction of important military or defense properties.

Training Auxiliaries

It should be manned by a mixture of regular firemen and auxiliaries, except in cases where the number of volunteers already members of the fire department in outlying areas make auxiliaries unnecessary. Auxiliaries should be trained by professional fire department instructors and should be completely under fire department authority. The number will depend on the availability of regular firemen, either paid, part-paid or volunteer; the use of off-duty firemen as a reserve; and the numbers needed to man new equipment on a 24-hour basis. In training of auxiliaries we plan to utilize the existing organizations and agencies now satisfactorily operating fire training programs. We do not plan to issue any FCDA manuals on conventional, well-known fire-fighting evolutions, but we do intend to publish pamphlets on the extraordinary civil defense phases of fire fighting. The information to be contained in such pamphlets will be usable, in additional training for the auxiliaries, as well as for civil defense training for the regular fire department forces.

Generally, we anticipate three types of training in the fire services:

1. Training of auxiliaries in regular fire-fighting evolutions. This will be the responsibility of the State and local fire organizations through existing or new channels as necessary.
2. Training of both auxiliaries and regular fire-fighting forces in the extraordinary civil defense phases of fire fighting. This will include emphasis on such subjects as relaying water over long distances, the utilization of secondary water supplies, emergency methods where hose threads differ and no adapters are available, etc.
3. Assistance in the instruction of fire officers in civil defense phases of fire administration, especially integration of men and equipment with other civil defense forces, and the command of large forces.

WE have sent to the State Civil Defense Directors an Advisory Bulletin which attempts to answer the request for recommendations with respect to numbers of volunteers required for the respective services of organized civil defense. It is understood that, as the civil defense program develops, experience may point to the need for revisions, but this was an attempt to estimate total civil defense requirements for the country.

For the fire services we have considered that the number of men should be tied to the equipment available, or to be made available in the near future. It is suggested that at least 10 men per pumper per 8-hr. shift, or 30 men per unit, should be a minimum for adequate civil defense fire fighting. Most of the support for the critical target areas will come from volunteer companies in outlying areas. Many of these companies now have men in excess of the suggested figure. Where additional manpower is needed in the volunteer areas, it would seem better to add further volunteers to the regular company, rather than to have two groups consisting of regular volunteers and auxiliary volunteers. In the communities where the personnel is paid or part-paid, auxiliaries as such would be needed to provide the minimum number of men, according to this method. Provision of volunteers should not be used as a substitute for the increase up to normal strength of the regular fire department forces.

Fire Guard Training

We have planned, or have already in operation, three technical schools. The programs in each school are designed to provide standardized technical civil defense training to persons who are to return to their local communities to instruct and assist in civil defense programs. Fire and rescue training are included in these courses. This fire training, however, is designed primarily for the fire warden and fire guard level, and does not include regular training for auxiliaries or professional firemen. The Fire Wardens or Fire Guards will be under the administrative control of the Warden Service, and will assist in the self-help program for handling small fires.

It is recognized that the innumerable small fires that will occur must be fought primarily by civilian population, either organized as fire guards in industrial plants and large buildings, or as fire wardens and individual householders. The problem of controlling these individual fires may be the greatest potential problem of all, and we must have a thorough and complete program of education in fire hazards in this country.

Honorable Claude A. Armour, Vice-Mayor and Commissioner of Police, Memphis, Tennessee, and Chief John C. Klinck, Memphis Fire Department, welcome fire fighters attending the 24th Annual Fire Department Instructors' Conference, held at Memphis January 8–11. Richard E. Vernor, Manager of the Fire Prevention Department, Western Actuarial Bureau, and Chairman of the NFPA Board of Directors, is Chairman of the FDIC.

It's Easy to RAISE MONEY for Your FIRE DEPARTMENT with *Wallace Brown Greeting Cards!*

It's easy and it's fun to earn welcome cash for your fire department treasury through the sale of famous Wallace Brown Greeting Cards to townsfolks, friends and neighbors. Hundreds of social, fraternal, and other groups raise money this easy way and it can bring in many, many dollars to help you finance the purchase of fire-fighting equipment, supplies and materials. Wallace Brown Cards are famous for beauty, quality, and value and the members of your group can easily take many orders simply showing samples to friends and neighbors—with up to 50¢ profit on every box sold.

Write for 3 Sample Assortments on Approval

SEND NO MONEY! Just rush your name and address today. We send you actual samples of THREE easy-selling assortments, with full details and money-making plans. We also send you our colorful, illustrated Booklet showing the entire 1952 Wallace Brown line. Write today.

WALLACE BROWN, Inc., Dept. H-21, 225 Fifth Ave., New York 10, N. Y.

QRS

Flameproofing Chemicals

QRS de luxe for draperies
QRS No. 55 for glazed chintz and sheers
QRS No. 23 flame, water, mildew resistant paint for canvas
QRS No. 8 for foliage, wood, corrugated paper
QRS No. 57 flame resistant paint for foliage, wood, etc.

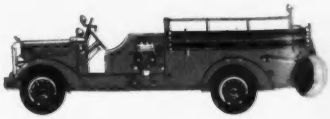
Write for free catalogue and name of nearest distributor.

Q R S NEON CORPORATION
Chemical and Process Division
170 North Halstead Pasadena 8, California

the better to serve you...

MACK FIRE APPARATUS

will move to
larger quarters at



TRIPLE COMBINATION PUMPERS—500 TO 1500 GPM

ALLENTOWN, PA.

New home of Mack fire apparatus, centralized in Allentown, Pa. —part of the greatest research, engineering, manufacturing and service facilities in the fire apparatus field.

Sharply growing demand for Mack fire apparatus has increasingly overtaxed our present production facilities at Long Island City. Particularly since the introduction of our popular aerial ladder, we've just about been bursting at the seams. So that we may continue to serve your needs dependably and efficiently, larger quarters have become imperative.

This problem has been solved . . . by setting up a separate and streamlined production line at Allentown, Pa., a short distance from the main Mack plants. Incorporating the most modern manufacturing and testing equipment manned by seasoned Mack personnel, these capacious new facilities will enable us to serve you even better than before.

In a few months, Mack pumpers, ladder trucks, hose and squad cars will be rolling off this line. Meanwhile, production on present orders will be maintained without let-up at Long Island City.

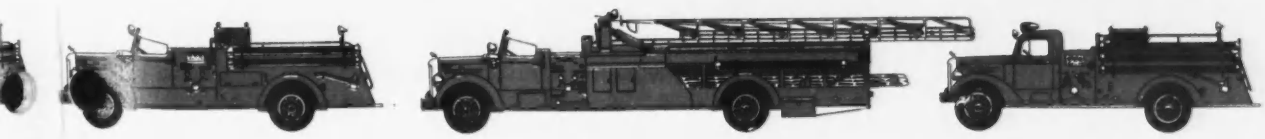
Our investment in this improvement is an investment in the faith in Mack apparatus that has led to their use by more than 1,000 American communities. It means a renewal and a strengthening of the traditional Mack pledge to the fire service — of our continued devotion to the highest standards of apparatus design, manufacture and maintenance. More than ever, "Built like a Mack" will signify *performance that tops them all.*

modernize with

MACK MANUFACTURING CORPORATION
FIRE APPARATUS DIVISION
Allentown, Penna.

Factory branches and distributors for service and parts in all principal cities. In Canada: Mack Trucks of Canada, Ltd.

Mack
FIRE APPARATUS



500 GPM • SQUAD AND HOSE CARS • AERIAL, CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS

Building a Fire Brigade in Bridgenorth, Ontario

By Chief Al Crowe, Bridgenorth Fire Brigade

In 1951 members of the Bridgenorth Fire Brigade decided to obtain a fire hall and fire protection equipment for their community. Here is an outline of the progress that they made towards that goal. It is an example of what can be done by volunteer fire departments who have taken the responsibility of giving fire protection to a rural area.

IN attempting to acquire fire protection for our community at Bridgenorth Township, we had formed no less than three committees in four years, with no tangible results. We finally hit our stride in setting up a fire department in our own village. We came to the conclusion that in order to have an organization that would function properly it should not be subjected to the possible petty squabbles of small-town politics. With this in mind, we had a meeting with our Township Assessor and found that in our village area there was some $300,000 worth of assessment. Because of this assessment, and because of a Provincial Government grant of 35 percent toward a new truck, meeting Provincial standards, we were allowed ample funds towards the purchase of a pumper. In addition, we had sold protection to 95 percent of the farmers in our area on a ten-year contract.

With these figures, we next approached our Township Council. The members fired one question at us. "If we buy this equipment, where will you put it?"

Our answer was "You buy the equipment and we will put a roof over it."

At the time there was not a building in the village suitable for housing equipment and we did not have a nickel of funds for building one, but the Council passed the motion to purchase the equipment that we asked for.

OUR committee had a meeting the following evening and decided to build a fire hall. We found a portion of road that had never been opened and obtained permission of the Council to build there. At the same time we started to raise money by running dances and other functions that would bring in funds. We finally reached our objective of approximately $1400.

Meanwhile we had started to build the fire hall with local volunteer labor and had it completed two weeks before the pumper was delivered.

After the pumper arrived we decided that we should also have a tanker. We bought a 1945 Dodge chassis, completely overhauled it, and built our tanker. While this was being done we were again raising funds to the amount of approximately $3000.

Today the tanker is completed and paid for. It has a capacity of 750 Imperial gallons (900 U. S. gallons) and a pump capable of 125 gpm (150 U. S. gallons) at 125 pounds pressure.

A companion piece of apparatus to the Bridgenorth pumper is this tanker, assembled by the volunteer members.

Good timing and labor of members of the Bridgenorth Fire Brigade led to the completion of this fire station just before the first piece of apparatus was delivered.

We have also built a very efficient fire alarm system with an inter-com system from the fire hall to three telephones on different party lines. An inter-com speaker is beside each phone with a push button to start the alarm. A master set is installed in the fire hall. In the event of a fire call coming in over any of the telephones, the person receiving the call merely presses the button, setting off the siren at the fire hall. The first man to arrive at the fire hall takes the call over the inter-com from the telephone that received the call. He writes the message on a blackboard. This system has proved efficient for us as we have no regular firemen to handle this particular job.

TO us, the most astounding part of the creation of the Bridgenorth Fire Brigade is that in May, 1950, we knew that we had to build a fire hall and that we had no funds. Today, the fire hall and equipment that is ours in Bridgenorth represents an investment of approximately $25,000 and the only debt outstanding is approximately $7000 against the pumper.

We hope that this information may be helpful to some communities that have found themselves in need of fire protection. We thank sincerely all those who have helped us in this project, both financially and otherwise.

Pertinent NFPA Publications

VOLUNTEER fire departments can find much valuable information in Volume IV of the National Fire Codes. Besides containing NFPA Standards No. 19 — Specifications for Motor Fire Apparatus, and No. 192 — Volunteer Fire Departments for Rural and Small Community Service, this volume also contains many other standards essential to all fire departments. Volume IV may be purchased for $4.00 from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. NFPA Standards Nos. 19 and 192 may be obtained from the same address for fifty cents each.

Operating Fire Department Pumpers

Getting the Most from the Pumper

PUMPERS should deliver their rated capacities at draft at not more than 80 percent of the motor speed at the peak of a certified brake horsepower curve of the motor used, without accessories. In pressure tests 90 percent of peak motor speed may be employed. These safe motor speeds should be well known to the pump operator. Little is to be gained by racing motors at excessive speeds other than possible early mechanical breakdown.

When operating centrifugal pumps at hydrants providing generous flows at reasonably good pressures, it may be possible to handle somewhat more water than the rated output of the pump at draft. By knowing the safe motor speed for the pump (this should be posted on the pump operator's panel), the operator can take the full volume that the pump can handle safely without exceeding the proper motor speed.

Sometimes, under such conditions, it may be found that the pump is handling a volume of water considerably beyond its rated capacity but because of overload the pump and engine cannot develop effective pressure. In such cases it may be wise to reduce the output sufficiently to bring the performance and pressures more closely in line with the design characteristics of the pumper.

For example, a 500 gpm pump may be handling 1000 gpm from a hydrant, but with low discharge pressures. It may be better to reduce the output to a point where the machine can function at a more efficient speed and deliver water at a pressure better related to the intended performance of the pump.

MANY, many times pumper operators are unfairly blamed for poor fire ground pumper performance when the real fault is that the officers in charge have demanded results far beyond the ability of either the pump or the water supply, or both. It is very important that fire ground officers know the state of the available water supply as well as the hose stream output possible from various pumpers under varying conditions.

It has been an all too common practice for officers to go back to the pump and tell the operator to step up the pressure when the machine is already working at or beyond full rated capacity at the pressure being delivered. Cases have even occurred where after the pump operator had adjusted his machine for maximum efficiency, officers have yanked open throttles with the result that breakdowns have soon occurred.

To forestall such difficulties it is well that operators keep the fire ground officers informed regarding the water supply situation at working fires. Officers should be told whether a satisfactory residual pressure is being maintained on the suction or inlet side of the pumpers.

Lines for additional streams should not be connected to any pumper for which inlet pressures is less than 5 to 10 lbs. unless it is intended to reduce the size of nozzle tips already in service. Also before ordering additional lines from pumpers already at work, it is essential that officers make certain that the pump is capable of supplying the desired streams at the required pressure. This can be determined by asking the pump operator whether his machine can supply the added stream. One experienced pump operator is known to have followed the practice, when his pump was working at capacity, of connecting a spare donut roll to any unused pump outlet. The end was thrown under the pump. This was to forestall any attachment of additional lines that would only impair the streams already in use.

The only situation where it is justifiable to attach additional lines to a pumper already working at capacity is when the lines are merely used to reduce pressure losses in other lines supplying the same nozzle. For example, when two lines from a pumper are providing 600 gpm to a 1½-in. tip the pressure loss in each 2½-in. line is 21 lbs. per 100 ft. of hose. By running a third line to the same nozzle the pressure loss will be cut to 10 lbs. per 100 ft. of hose. This may be very important where it is desired to get the maximum volume from the pump at the sacrifice of high delivery pressure. With the nozzle 400 ft. away the additional line would provide the same flow at a saving of 44 lbs. of pump pressure.

The following is a typical problem of choice between pressure and volume operation frequently encountered at fires. A 750 gpm pump operating in pressure position is supplying two 2½-in. lines at 200 lbs. with 30 lbs. residual at the hydrant or pumper inlet. The officer in charge desires to have an additional line. The hydrant residual pressure would indicate that the hydrant can supply another line but the increased flow will cause the inlet pressure to fall somewhat. The pump is rated to give 525 gpm at 200 lbs. so is working close to rated capacity at that pressure.

Assuming that some help will be received from the hydrant, the discharge pressure might have to drop to about 165–170 lbs. to provide 750 gpm at a safe motor speed when operation is transferred to volume or parallel position rather than pressure or series operation.

In other words, a pump cannot supply both its maximum volume and high pressure. The officer will have to choose the performance he wants; either about 525 gpm at 200 lbs. or 750 gpm at about 150 lbs.—plus hydrant residual pressure in both cases. This decision should be based upon full knowledge of the pump and hydrant situation.

A careful study of many reports of "low water pressure" occurring at large fires reveals that in most cases the failure was not with the water system but with the fire department in attempting to use hose layouts beyond the ability of the pumpers or hydrant system or both. Water pressure may be low because the volumes handled by the pump are too great to permit development of effective pressure by available pumping equipment. They may be low because the pump is not operated in proper position for pressure. They may be low because of excessive draft by fire department pumps beyond that contemplated when the water main distribution was installed.

These articles on pump operation will appear in FIREMEN *during 1952. Your NFPA Membership will assure you of the complete series.* — Ed.

Scientific Fire Prevention in Britain

By John Rigg, British Information Services

FIRE prevention in Britain is at an advanced stage of development. To two organizations, in particular, the Fire Offices' Committee, representing fire insurance companies, and the government-sponsored Department of Scientific and Industrial Research, fire prevention is of vital importance. Together they have set up what is known as the Joint Fire Research Organization, with offices and laboratories at Boreham Wood, near London, where the essential work of combating fire risk through scientific research is carried out.

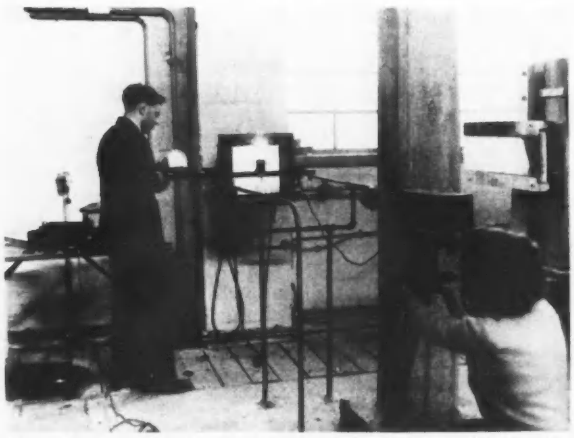
To the Joint Fire Research Organization is reported every fire attended by a brigade in Britain, so that outbreaks of special interest may be further examined. The results of its researches are embodied in an annual report; and in the latest issue* may be found information of interest and value to all who are fighting the danger of fire throughout the world.

Spectacular Research

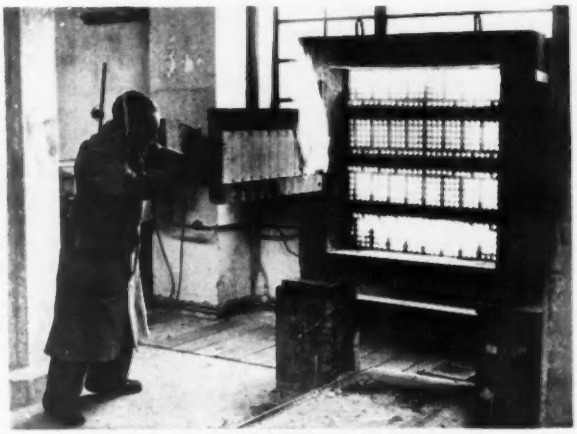
IT was this organization that carried out the experiment of burning down the two houses, alike throughout except that in one, linings and partitions were of fibre insulating board, in the other, of the same board covered with plasterboard. In the first house the fire started downstairs, made escape from the first floor hazardous in seven minutes; the first floor collapsed in 15 minutes, the roof in 19. On the other hand it took 23 minutes for the fire in the second house to involve wholly the room in which it was started, and escape from the first floor was theoretically possible up to 26½ minutes after the outbreak.

Such fire tests are vitally necessary, but none the less costly. It may be necessary, for example, for a newly constructed floor to mature at the testing station for six or eight weeks before it can be fire tested. This problem of time has resulted in the development of an electrical analogue which enables heat flow in specimens under fire to be computed electrically, and thus saves much time previously spent in human mathematical calculations.

*"Fire Research 1950" available from Sales Section, British Information Services, 30 Rockefeller Plaza, New York 20, N. Y., price 65 cents.



Measuring the time taken by various woods to ignite at Britain's Fire Research Station at Boreham Wood, near London. Radiation heat from the furnace is measured on a pyrometer.



A research worker at Britain's Fire Research Station measures the spread of flames on wall boards. The specimen is marked in sections and the materials graded according to the speed at which flames travel.

This last year has also seen experiments in the application of foam to protect forest growth in the path of a fire. Two artificial fires in a Scots pine plantation were retarded, one by water, and one by foam. The rate of spread of fire diminished much more rapidly in the foam-treated than in the water-treated plot; foam treatment stopped the fire halfway, but the water-treated plot burned right through.

Much of the testing at the Fire Research Station is done by bringing the material to be tested within operating distance of a gas heated radiant panel; and the resulting calculations are based, not on temperatures of material or panel, but on the number of calories that fall on a square centimeter each second.

Testing Equipment

FIRE-FIGHTING agents and equipment are tested also. Research into the most effective drop size for sprays has shown, for instance, that for oil fires drops of water should be delivered in a narrow range, from 0.4 to 0.6 of a millimeter in diameter.

Some of the more spectacular work of the Organization is in the testing of building elements under stress. On a recent visit I saw striking evidence of tests just concluded in the debris remaining — struts of prestressed concrete shattered to fragments, the asbestos model of a house burnt out inside, pieces of asbestos flue which "almost blew up" under test. I was shown, too, the furnace where building columns can be fire tested under a load of up to 500 tons; another where floors bearing weights equal to one-and-a-half times the load they were designed to carry are tested until they collapse under the combination of heat and pressure; and yet a third where walls or ships' bulkheads may be subjected to a temperature which after six hours rises to 1,200 degrees centigrade.

It is information such as this, interpreted by the scientists of the Fire Research Organization, which is of such vital importance in lessening fire risks wherever they may be.

Fire Consciousness

TWENTY-EIGHT years ago 90-year old Mrs. Minnie H. Mattoni, of Binghamton, N. Y., requested her landlord to build this ladder as emergency means of escape. Recently fire involved her dwelling. Stairs were blocked by flames so that she had to resort to the ladder for escape. She was quoted as saying "My neighbors always kidded me about that ladder. Today they would have seen a real demonstration. After 28 years the ladder paid off. I'm lucky and happy."

New Use for Roof Ladder

From a letter to the December, 1951, issue of "The Flame," publication of the City Fire Fighters' Association, Philadelphia; Local 22, IAFF.

"I RECENTLY watched firemen of a certain city open up the roof of a burning building for ventilation. I saw a truckman remove a scuttle that covered an air shaft by using a roof ladder as a lever, snatching off the scuttle quickly and with little effort. The hooks were open and the ladder was hooked onto the scuttle and lying across it. The truckman merely pulled the ladder towards him and the lid came up, slid across, and down the shaft opening.

"Of course, an axe or a claw tool would no doubt have done the job equally well, but it so happened that the ladder was close at hand. Its use had one noticeable advantage. It permitted the removal of the scuttle without exposing the truckman to any sudden rush of flame, smoke or gases, which often follow the removal of such covers."

Items in the News

Plowed Snow Hinders Fire Fighting

DESPITE the objections of Chief Engineer Thomas H. Burke (NFPA Member), of the Pittsfield, Massachusetts Fire Department, the public works commission of that city recently adopted a new plan for snow removal. Under the adopted plan snow is plowed from the curb and piled in the center of the street.

The logic of Chief Burke's objections to the new method was upheld during a recent fire. Because of two recent storms, the piled snow accumulated to a depth of four feet. As a result aerial ladder trucks responding to the alarm could not maneuver properly.

A woman trapped on the third floor of an involved dwelling was rescued by use of a 35-foot ladder. Traffic on the street, a main thoroughfare, was thoroughly blocked from movement.

Fire Prevention Award

NFPA Technical Committee meetings were held at the Hotel Martinique in New York City, January 15–25. Shortly before these meetings Frank W. Kridel, President and General Manager of the Hotels Martinique and Concourse Plaza was presented with a distinguished public service award. (Left to right in picture at left) Mr. Kridel, State Senator MacNeil Mitchell, Chairman of the Joint Committee on Housing and Multiple Dwellings and Fire Commissioner Grumet. The plaque was given to Mr. Kridel in recognition of his outstanding efforts in promoting fire prevention in hotels. He is Chairman of the Fire Prevention Committees of both the New York City Hotel Association and of the American Hotel Association and is also an honorary Deputy Chief of the New York City Fire Department.

CAIRNS

The "CLIFTON"

(No. 900 — REGULATION)

Regulation 8-comb style, with standard front; made of FLINT-FLEX, the rugged plastic that is light, tough, flexible and non-conducting; has the new FORMABLE HEAD BAND that can be moulded to your own particular head shape; complete protection at moderate cost. Also available in drop brim style.

Write for Catalog 340

Cairns & Bros., Inc. Allwood, Clifton, N. J.

HELMETS

Pyrene
REG. U.S. PAT. OFF.

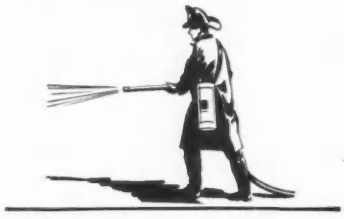
THE MOST COMPLETE LINE OF AIR FOAM EQUIPMENT

Everything from portable equipment to built-in systems for large storage tanks and other special hazards

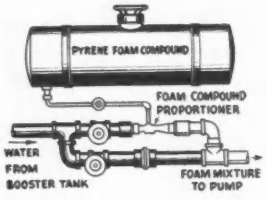
Fire departments are converting to air foam because it is the most effective extinguishing agent for putting out large flammable liquid fires. It is also effective on ordinary combustibles. Its use is desirable where water supply is limited, because it gives 10 gallons of foam for every gallon of water available. It is simple and easy to use; requires a minimum of manpower and very little space; goes into action fast. Whatever your air foam requirements, Pyrene* has the equipment you need. Write for free Pyrene Air Foam catalog, a comprehensive, fully illustrated, 24-page foam manual. It's a basic reference work that belongs in your fire-fighting library.

PYRENE PORTABLE AIR FOAM PLAYPIPES

Playpipes are special hose nozzles that combine foam compound and air with water—automatically, and in the right amounts. They can be used wherever water under pressure flows at 20 gallons or more per minute. Available in five different sizes, producing from 200 to 1,600 gallons per minute. Foam compound may be fed to stream either from handy hip pack or directly from shipping container, or from tank on truck.



PYRENE AIR FOAM SYSTEMS FOR MOTOR FIRE APPARATUS



Can be installed by fire department's own repair shop on any fire engine carrying a supply of water. Require only addition of small foam compound tank, proportioner, and simple piping. Foam is discharged through playpipe. Speedy and easy to operate. May also be used with wetting agent by adding a wetting agent tank and selector valve to permit choice between foam compound or either 1 or 2 percent wetting agent.

*T.M. Reg. U.S. Pat. Off.

Pyrene AIR FOAM

Playpipes, suction side proportioners, forcing type foam makers, portable foam towers, motor fire apparatus systems, spreader tips, around-the-pump proportioners, auto induction systems, pressure line inductor systems, proportioning tank systems, in-line inductor systems.

PYRENE MANUFACTURING COMPANY

587 Belmont Avenue **Newark 8, New Jersey**

Affiliated with C-O-Two Fire Equipment Co.

Deaths and Property Damage from Fire in 1951

FIRES caused 12,400 fatalities in the United States and Canada during 1951 according to estimates prepared by the NFPA Department of Fire Record. The methods presently available and used to estimate fire deaths admittedly may introduce errors although it is believed that the above figure is a reasonably accurate approximation. The NFPA Committee on Fire Casualty Statistics is considering means of compiling accurate figures on fire deaths and hopes to have a more accurate basis for estimates of loss of life from fire in the near future.

Preliminary estimates indicate that fires in the United States caused $823,500,000 property damage in 1951, including $742,000,000 damage to buildings and contents, and $81,500,000 loss to aircraft, motor vehicles, forest and other miscellaneous fires. Corresponding 1950 figures were $776,440,000, $699,600,000 and $76,840,000 respectively. The 1951 estimate is the largest annual loss on record.

The National Board of Fire Underwriters reports that the estimated loss for the 12-month period ending December 31, 1951 was $731,405,000, an increase of 6.2 per cent over their estimate of $688,406,000 for the same period ending December 31, 1950.

Sufficient data are not as yet available to estimate 1951 Canadian losses at this time.

•

Eighth Annual Arson Investigators' Seminar

THE eighth annual seminar and training course for arson investigators will be conducted at Purdue University, Lafayette, Indiana, April 28-May 2, 1952, according to an announcement by Prof. J. L. Lingo, Director of Purdue's Public Safety Institute.

The course offers an opportunity for specialized study and discussion of arson and investigation problems under the guidance of outstanding police and fire specialists from the United States and Canada.

Further information may be obtained from the Public Safety Institute, Purdue University, Lafayette, Indiana.

Fire Protection and Accident Year Book — 1952

THE 1952 Edition of the "Fire Protection and Accident Year Book" has been published by Benn Brothers, Ltd., Bouverie House, 154 Fleet Street, London E.C.4. Price 10/6 d ($2.10) inclusive of postage.

Not only are all the public fire brigades in the British Isles listed, together with available fire fighting appliances, but similar records covering fire fighting units wholly maintained by industry and private sources now ready to assist in the new civil defense scheme. The "Year Book" also contains information about fire brigades in the British Commonwealth and Empire, together with legal and technical data of particular interest to all those in industry and the public services who are primarily concerned with the safety of life and property. Fire departments in countries using the British imperial gallon measure, as in Canada, should find the tables of help and interest.

●

Coming Events

Indiana: The 8th Annual Arson Investigators' Seminar will be held at Purdue University, April 28—May 2.

The 19th Annual Indiana State Fire School will also be held at Purdue University, May 26–29.

Details may be obtained from the Public Safety Institute, Purdue University, Lafayette, Indiana.

Pennsylvania: The Philadelphia Fire and Safety Conference will be held at the Bellview Stratford Hotel in Philadelphia, March 4–5. One of the sessions of this conference is sponsored by the Keystone State Fire Chiefs' Association. Information may be obtained from Leonard Roberts, Keystone State Fire Chiefs' Association, Trevose, Pennsylvania.

●

FOR SALE

1942 ¾-ton Panel Body Ford floodlight truck. Motor and tires in A-1 condition. Siren and 8-inch chrome bell. Alternating red lights front and rear. One auto spotlight on right side.

1 5½ K.W.-DC generator driven from power takeoff unit. Recently overhauled.

1 Hi-speed smoke ejector in case with 200 feet of wire.

Approximately 300 feet of heavy duty rubber covered wire.

1–2 and 2–4 connection junction boxes.

3–1000 watt heavy duty floodlights.

2–500 watt heavy duty floodlights mounted on roof at rear.

2–250 watt hand lights, with 100 feet of wire on each.

1 10-circuit panel board with Voltmeter and Ampmeter.

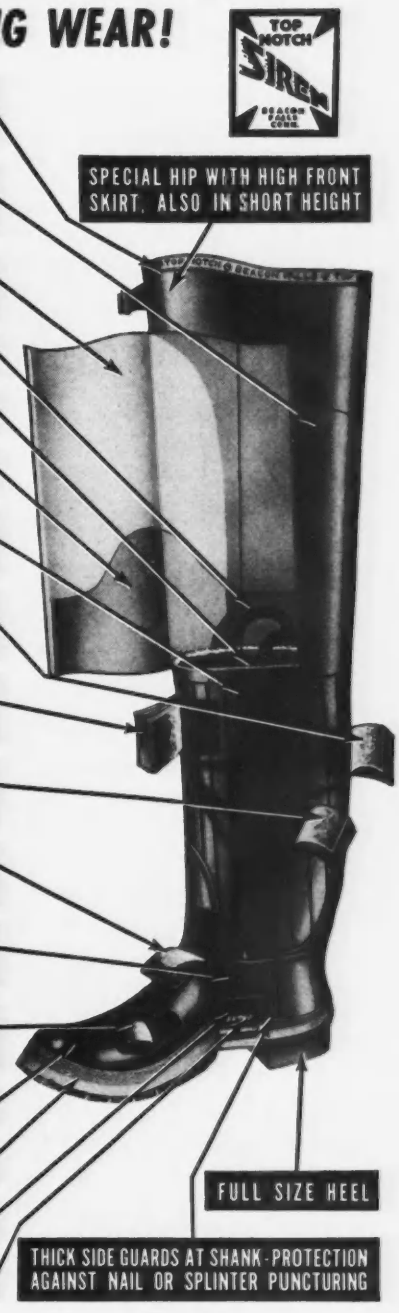
1 Set of skid chains.

1 Pickhead axe.

Pikesville Volunteer Fire Company
1212 Reisterstown Road
Pikesville 8, Maryland

SIREN FIREMAN'S BOOT

20 KEY FEATURES--YOUR GUARANTEE OF FOOT COMFORT, SAFETY AND LONG WEAR!


TOP NOTCH SIREN
3" HIGHER ST. KING LENGTH FOR QUICK ADJUSTMENT AND MORE PROTECTION
OUTSIDE, EXTRA RUBBER REINFORCEMENT ABOVE KNEE
SPECIAL HIP WITH HIGH FRONT SKIRT, ALSO IN SHORT HEIGHT
ENTIRE SKIRT NET LINED FOR AMPLE STRETCH
STURDY INSIDE PULL-ON LOOPS AT KNEE
WARM WOOL LINING
REINFORCED KNEE PATCH OF CREPE RUBBER
VULCANIZED BY AMMONIA CURE—PATENTED EXCLUSIVE FEATURE
SIX PLIES OF FABRIC AND RUBBER THROUGHOUT LEG
SPECIAL STIFFENING COLLAR FOR EASY FITTING
FABRIC AND RUBBER IS "SHINGLED" TO DISTRIBUTED STRAIN
FOURTEEN PLIES OF FABRIC AND RUBBER WITH SPECIAL FRONT STAY
MADE OVER SPECIAL LAST, FULLER THROUGH THE ANKLE AND INSTEP
NINE PLIES OF FABRIC AND RUBBER AT THE VAMP
REINFORCING TOE CAP PROTECTION
EXTRA THICK SUPER-QUALITY SOLES
FELT COVERED CUSHION INSOLE
REINFORCED LADDER SHANK
FULL SIZE HEEL
THICK SIDE GUARDS AT SHANK-PROTECTION AGAINST NAIL OR SPLINTER PUNCTURING

BEACON FALLS RUBBER FOOTWEAR
BEACON FALLS, CONNECTICUT

Washington Classifies Lightning Rods and Fire Escapes as "Ornamental Ironworks"

MANUFACTURERS of certain fire protection devices and equipment are having considerable trouble because of improper classification by the National Production Authority in Washington. One outstanding example is the classification of both fire escapes and lightning rods as "ornamental ironwork." This classification is not logical, since lightning equipment uses little or no iron, and neither lightning rods or fire escapes are by any stretch of imagination "ornamental." It has, however, served to designate these essential fire protection items as non-essential, from a materials priority point of view.

Fire fighters do not have to be told that lightning is one of the leading fire causes and, in fact, is the leading cause of farm fires. It also causes many serious industrial losses, and chimneys and other structures must be protected against it. Numerous appeals from fire protection officials have received short shrift from the National Production Authority. A good example of government "gobbledegook" is this reply written by H. M. Beshers, Director, Production Scheduling and Product Assignments, NPA, in response to a letter from NFPA General Manager Percy Bugbee.

> "The Product Assignment Directory used by the National Production Authority is based on the classifications used by the Bureau of the Census in the 1947 Census of Manufacturers, which agrees with the Standard Industry Classification of the Bureau of the Budget."
>
> "Assignment of a product to any specific Industry Division will not control the quantity of material to be allotted to the manufacturers of that product. Applications from the manufacturers of lightning rods for material for use in the first quarter of 1952 are now being processed and they are receiving approval for sufficient material to cover all Military and Atomic Energy requirements, in addition to a substantial allotment for their other important customers."

A member of the NFPA Farm Committee, Mr. S. D. Kretzer, President of the National Lightning Protection Company of St. Louis, Missouri, writes:

"The original allocations of copper and aluminum to the lightning rod manufacturers for the first quarter of 1952 — and I mean to all manufacturers — didn't amount to a drop in the bucket. Then after the battle of contact got under way some of the boys down in Washington actually doubled the allocation and now they are writing letters saying that the lightning rod manufacturers should be very well pleased with the big increase they were given, but counting the increase, the tonnage still doesn't amount to more than two drops in the bucket. You can take a zero and multiply it all you want and you still have zero.

"Practically speaking, that is the situation and it looks now as if there simply won't be any lightning rod material available for the protection of farm barns and grain storage buildings during 1952, and that certainly is not going to make a lot of the insurance companies happy, especially those who have featured the matter of lightning rod credits.

"When one takes into consideration the fact that the actual tonnage of material that is required annually by the entire industry is comparatively very, very small compared to that used by industries that are also essential, it does seem to me this angle to the situation should be taken into consideration by the powers to be."

Perhaps the only kind of "lightning" the people in Washington understand is that kind that strikes in November. Letters from fire departments serving rural communities addressed to their representatives might be most helpful in providing that "lightning."

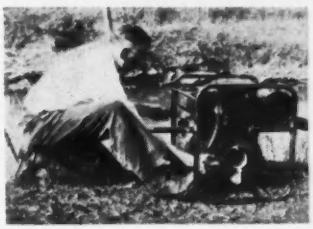
"Mayor, we'd like to contribute to your scrap drive."

. . . HEY CURLEY . . . YA DON'T HAVE TO THAW OUT THAT EXTINGUISHER . . . IT WON'T FREEZE!

You needn't worry about high or low temperature extremes with Ansul Dry Chemical Fire Extinguishers. All Ansul Extinguishers are tested and approved for –40°F operation. Special Low Temperature models are available for –65°F conditions. These same extinguishers can withstand prolonged exposure to temperatures up to 160° above zero. Think of the savings these features give you! No heated cabinets. No freezing of unprotected extinguishers left outdoors in winter weather. No accidental discharge due to exposure to high temperatures in a boiler room, etc. Still Ansul gives you the best fire protection money can buy.

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN

Quick-Starting Portable . . . HALE FZZ



Firefighters are pleased with the quick-starting ability of the Hale type FZZ Portable Pumping Unit — an especially valuable feature in freezing weather. The 4-cycle single cylinder 8¼ H.P. engine ensures ease and speed in starting . . . and plenty of power to the direct-connected Hale Pump. NOTE: Discharge adapter available for 2½-inch fire hose.

Many FZZ owners use a Hale 2½" adapter for pumping through a long single 2½" line to a fire distant from source of water. They then wye at the fire end into two 1½" lines providing two capable fire streams.

The FZZ will supply from draft 60 GPM at 90 lbs. and 150 GPM at 30 lbs. Starts easily and quickly in all types of weather.

Write for FZZ Folder. Let us know if your Company wants a demonstration.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

FIRE PUMPS IN ALL STANDARD CAPACITIES

CIRCUL-AIR
THE AIR CONDITIONING
FIRE HOSE DRYER

Patented

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. No other drying method is so fast — so economical — so easy to use.

WRITE FOR CATALOG TODAY

THE CIRCUL-AIR CORPORATION
575 East Milwaukee Detroit 2, Mich.

FIRE and POLICE UNIFORMS

SHIRTS
BADGES
CAPS
ACCESSORIES

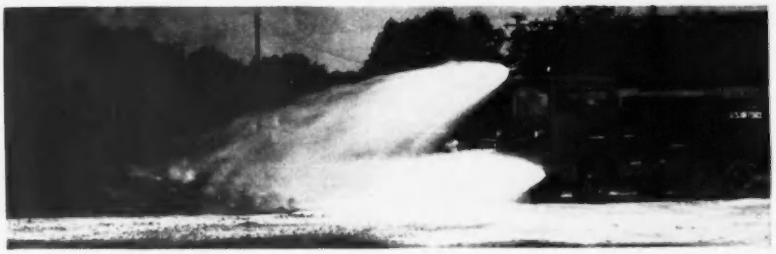
RUSSELL UNIFORM
NEW YORK

RUSSELL UNIFORM CO.
192 Lexington Ave.,
New York 16, N. Y.

Please send free catalog checked below:

☐ Fire Department Uniforms and Equipment
☐ Police Department Uniforms and Equipment

Mr. .....
Address .....
City..... Zone.... State...



Courtesy U.S. Air Force

USAF Crash Truck

FIRST post-war production USAF crash truck, designated Type O-10, was developed to be adaptable to all climates, all terrains and to be air-transportable by the USAF C-124 (Globemaster strategic cargo plane). The truck weighs 26,700 lbs., has a 196 HP Continental motor (2800 RPM), 12.00 x 20, 12-ply tires (pressure recommended 25 psi), and is designed to accelerate to 50 MPH from a standing start in 1400 ft. Extinguishing agents include 550-gal. water tank, 50-gal. foam tank and 200 lbs. of CO_2 (to be replaced by Chlorobromomethane in later production models). Turrets may be hydraulically or manually operated from the cab with joysticks providing azimuth and elevation and thumb switches controlling on and off discharge.

Complete details published in NFPA Aviation Bulletin No. 73, available from NFPA Executive Office for 50 cents.

Fire Training Film

THE American Petroleum Institute has announced the release of a 16 mm, 20-minute fire training film entitled "Fog Techniques in the Extinguishment of an Oil Well Fire." It demonstrates preferred techniques in the use of fog nozzles in the control and extinguishment of various types of flammable liquid and gas fires. The picture is the sixth privately made film sponsored by the Institute and has had wide loan circulation in the oil industry. Prints are obtainable through API at a cost of $85. Orders should be directed to Mr. F. G. Wilson, API, 1625 "K" Street, N.W., Washington 6, D. C.

Civil Defense on TV

A TV program dealing with the subject of fire in civil defense has been issued by the Federal Civil Defense Administration. It is available to local television stations as one of seven kinescopes in a series of programs entitled "Survival."

Each of the kinescopes runs for a half-hour. No. 4 deals with the atomic bomb as an incendiary weapon, fire storms, vulnerability of some leading American target cities to destruction by fire and demonstration of fire fighting for householders. The series may be obtained by TV station executives by writing to the F.C.D.A., Washington 5, D. C.

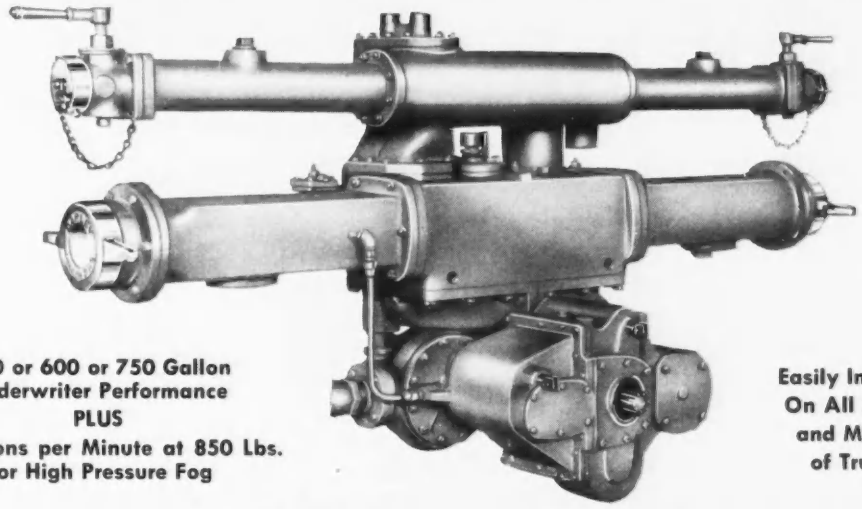
If You're In The Market for A New Fire Pump It Will Pay You To Test A Champion Before You Buy Any Pump

If your Department is planning the purchase of a Fire Pump for replacement of a worn out pump or for building a new fire truck, you will want to consider our offer to let you try before you buy. You can order any pump from us with the understanding that you have the privilege (without any obligation to purchase) of mounting the pump on your chassis and making any tests to prove Champion superior performance to yourselves.

If the Champion Centrifugal does not come through every test with flying colors you can ship it back and we'll pay the freight both ways. Your chassis will not be altered or damaged, in any way. We welcome competitive tests — test a Champion alongside any other fire pump of same capacity. That is, if you can find another pump manufacturer willing to ship a pump on trial.

Our offer applies to any Champion Fire Pump or Portable Pumper you may select.

The 3-Stage DUAL SERVICE CHAMPION



500 or 600 or 750 Gallon Underwriter Performance PLUS 60 Gallons per Minute at 850 Lbs. For High Pressure Fog

Easily Installed On All Makes and Models of Trucks

PERFORMANCE REPORT OF ACTUAL TEST—SH500 THREE-STAGE CHAMPION FIRE PUMP
POWERED BY 140-HORSEPOWER ENGINE
OUTPUT FROM THIRD STAGE

Volume	*Pressure*	*Engine Speed*
190 G.P.M.	500 Pounds	2240 R.P.M.
157 G.P.M.	600 Pounds	2350 R.P.M.
125 G.P.M.	700 Pounds	2530 R.P.M.
92 G.P.M.	800 Pounds	2700 R.P.M.
77 G.P.M.	850 Pounds	2780 R.P.M.
61 G.P.M.	900 Pounds	2870 R.P.M.

OUTPUT WITH FIRST AND SECOND STAGES IN PARALLEL AND OPERATING SIMULTANEOUSLY WITH THE THIRD STAGE

Volume	*Pressure*	*Engine Speed*
65 G.P.M. (from third stage)	500 Pounds	2370 R.P.M.
500 G.P.M. (from first and second stages)	120 Pounds	2370 R.P.M.

OUTPUT WITH FIRST AND SECOND STAGES IN SERIES AND OPERATING SIMULTANEOUSLY WITH THE THIRD STAGE

Volume	*Pressure*	*Engine Speed*
60 G.P.M. (from third stage)	600 Pounds	2260 R.P.M.
250 G.P.M. (from first and second stages)	220 Pounds	2260 R.P.M.

W. S. DARLEY & CO., Chicago 12

You bet I specify
MIDWESTERN Protective Clothing
...my men deserve the BEST!

PROTECTION
COMFORT
SERVICE

There is no substitute for the extra protection, built-in comfort and longer wear you get by specifying Midwestern clothing. In our vast selection of rubber materials you will find the type of fabric exactly suited to your climate and needs. You can count on the softness and flexibility of the high-grade materials used to meet your most exacting requirements for lasting comfort and rugged service.

Due to government requirements for Midwestern Protective Clothing, prompt delivery will be assisted if you place your order early. For complete information, have your Midwestern dealer show you our full line. A letter to the factory will also bring you literature and material samples for your inspection.

MIDWESTERN MFG. CO., Mackinaw, Illinois
Manufacturers of the Famous MACKINAW Coats

POWHATAN

1892 - 1952

Serving Municipal and Industrial Fire Protection

60 Years of Manufacturing Know-how!

SPECIFY POWHATAN ON YOUR NEXT ORDER

POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

Membership Report

A Goal of 2,000!

SINCE January, 1951, fire departments have been enrolling in NFPA at the average rate of 23 per month. Current NFPA Fire Department Membership is 1,708 fire departments and 21,627 men.

Efforts will be made throughout 1952 to bring this membership to at least 2,000 fire departments. With the assistance of chiefs and fire departments who are now members of NFPA this goal should be within reach. Any help towards this end will be greatly appreciated.

If you happen to belong to a department that has an NFPA Membership then you should be able to tell a non-member department what benefits you have received through NFPA. You certainly can find food for conversation in FIREMEN magazine. You can explain that any fire department or chief of a fire department is entitled to six (6) subscriptions to this monthly publication through NFPA Fire Department Membership. Single subscriptions to the NFPA "Quarterly" and to *Fire News* are also included with the membership. If more than six (6) subscriptions to FIREMEN are needed for a fire department, then extra subscriptions cost only $1.25 each.

If you desire further information on NFPA then write to the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. Application blanks or any other necessary material will be forwarded promptly. Or, the application blank appearing in this issue of FIREMEN (back cover) provides a convenient means for enrolling members.

NFPA Welcomes:

The following fire chiefs and fire departments as new NFPA Fire Department Members.

Michigan: Park Township Fire Department No. 2, Holland; Henrietta Township Fire Department, Munith.

Oklahoma: Panama Fire Department, Panama.

Oregon: Chief R. V. Locke, Oregon City Fire Department, Oregon City; Pendleton Fire Department, Pendleton.

Washington: Leavenworth Volunteers, Leavenworth.

Employee Organization for Fire Safety

FIRE department members responsible for the protection of areas containing industrial plants, institutions, and similar occupancies can give valuable suggestions on fire protection to responsible authorities of those organizations. Plant managers and others responsible for setting up fire safety organization for these occupancies are appreciative of any such help rendered by fire department members.

A good suggestion that can be made is that these management personnel refer to the 1951 edition of "Employee Organization for Fire Safety." This publication discusses plant fire safety organization, both from a normal peace-time point of view and from the point of view of measures which a plant should consider in organization for civil defense. It describes fire inspection procedures, exit drills and evacuation plans, first aid fire fighters (fire guards), and private fire brigades. Copies of the book may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. Price is fifty cents per copy. Quantity discount for 25 copies is 25%; for 500 copies 33⅓%.

"Water vs. Fire"

AN excellent training bulletin, "Water vs. Fire" has been prepared by the U. S. Forest Service, Fire Research Group at the California Forest and Range Experiment Station at Berkeley. This illustrated bulletin, showing correct techniques in fighting forest, brush and field fires, is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., at 30¢ per copy, with 25% discount for lots of 100 or more.

Connecticut Fire School

THE 11th Annual Connecticut Fire College will be held in New Haven May 19th to 24th. The college will include sections on Fire Marshal, Fire Officer, and Firemen Training, and a new section on Industrial and Institutional Fire Protection. The final day will be combined with the New Haven Field Day demonstration.

THE "BLITZ BUGGY" FIRE FIGHTER

4-wheel Drive Willys Model

Fights All Classes of Fire - - - *Anywhere!*

Pumps fog, foam or solid stream while moving 5–20 MPH.

Carries 200 gallons of water and pumps from draft or hydrant at 150 gpm.

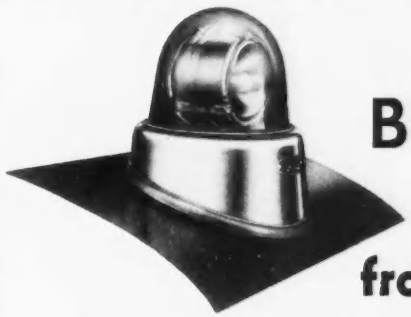
Built for rough going in woods, fields, ditches, steep grades - in any weather.

Approved for rural fire fighting by N. Y. State fire underwriters.

Write for details and specifications

HI-PRESSURE FOG EQUIPMENT CO. OLD FORGE, N. Y.

DANGER waits where least expected -



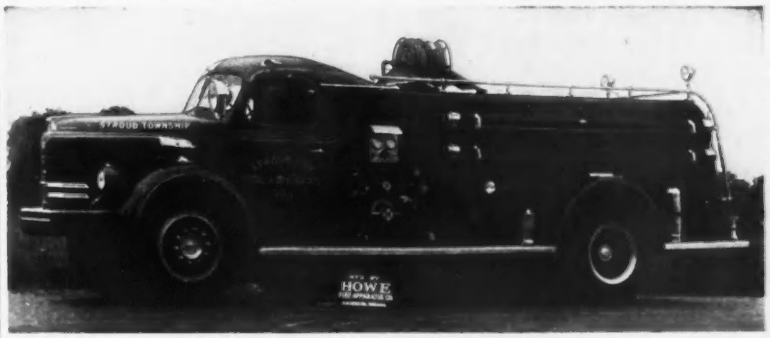
FEDERAL Beacon-Ray *warns* from every angle!

Every crossroads is a crisis when you misplace your faith in *one-angle* warning lights! Equip your apparatus with the *one* emergency light that commands caution from *every angle* . . . the FEDERAL BEACON-RAY LIGHT.
Two Powerful sealed-beam lamps, mounted back-to-back, rapidly rotate for complete 360° protection on the way, or standing still at the scene of a fire. As more and more fire departments specify BEACON-RAY, this sweeping flash of intense light is becoming THE symbol of fire fighters on the way . . . automatic clearance of right-of-way from *all angles!*

Specify the Finest - **Federal Beacon-Ray Lights - Federal Coaster Sirens**

Write today for Emergency Signals Bulletin

FEDERAL ENTERPRISES, Inc.
formerly: Federal Electric Company
8717 S. State Street Chicago 19, Ill.



HOWE Fire Truck Equipment Meeting Every Service Since 1872
Centrifugal, Rotary, and Piston Pumps supplied
HOWE FIRE APPARATUS COMPANY, 1406 West 22nd Street, Anderson, Indiana

PROTECT
YOUR EQUIPMENT

Flash 'N Wag

Flashing, oscillating WIG-WAG Redhead beam quickly clears the driver's side of the road as well as warning those approaching. Sends powerful signals 1,000 ft. ahead. Visible for miles. Safer, faster, quieter runs. 6" and 8" diameter sizes.

ALL KINDS OF EMERGENCY AND SPECIAL LIGHTS FOR CARS, PUBLIC UTILITIES AND INDUSTRIES.

CARPENTER LEADS THE WORLD IN PORTABLE AND EMERGENCY FLOOD and SEARCHLIGHTS

Write for Catalog showing many more Emergency Lights.

CARPENTER MFG. COMPANY
BOSTON-45-SOMERVILLE, MASS.

INDEX TO ADVERTISERS

	Page
American District Telegraph Co.	4
Ansul Chemical Co.	27
Beacon Falls Rubber Footwear	25
John Bean Division, Food Machinery and Chemical Corp.	35
Cairns & Brother, Inc.	23
Carpenter Mfg. Co.	32
Circul-Air Corp.	28
W. S. Darley & Co.	29
Federal Enterprises, Inc.	31
Gamewell Co.	33
Hale Fire Pump Co.	27
Clifford B. Hannay & Son, Inc.	34
Hi-Pressure Fog Equipment Co.	31
Howe Fire Apparatus Co.	31
Mack Mfg. Corp.	18, 19
Metcalf Brothers & Co.	26
Midwestern Mfg. Co.	30
Powhatan Brass & Iron Works	30
Pyrene Mfg. Co.	24
QRS Neon Corp., Ltd.	17
Rockwood Sprinkler Co.	2
Russell Uniform Co.	28
D. B. Smith & Co.	3
Wallace Brown, Inc.	17

What's New In Fire Equipment?

New Rockwood Catalog

A new catalog has been published by the Rockwood Sprinkler Company, 38 Harlow Street, Worcester 5, Massachusetts. It describes and illustrates that concern's complete line of portable fire-fighting tools and chemicals available to industrial plants, refineries, oil transport companies and municipal fire departments. Copies of the new publication will be sent by manufacturer without charge upon request.

●

Fire Extinguisher Features Corrosion Arrestor

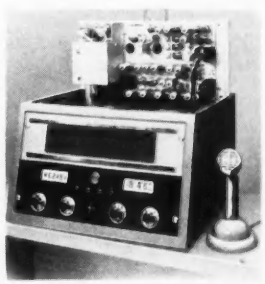
The General Detroit and General Pacific Corporations have announced a new one-quart fire extinguisher that features a patented corrosion arrestor. Known as the General Quick Air Fire Guard the extinguisher has been approved by the Underwriters' Laboratories with the rating B-2, C-2. Descriptive literature may be obtained free from the General Pacific Corporation, 1501 East Washington Boulevard, Los Angeles 21, California, or from The General Detroit Corporation, 2272 East Jefferson Avenue, Detroit 7, Michigan.

●

Wetting Agent Made by National Foam System, Inc.

National Foam System, Inc., West Chester, Pennsylvania, manufactures a wetting agent known as DRENCH. The agent is mixed with water in a ratio of 1 percent by volume for class "A" fires such as wood, textiles, paper and rubbish. Manufacturer claims that it is effective in water ranging from pH-2 to pH-10, and in concentration of calcium and magnesium salts up to 500 parts per million, which includes most natural water supplies. Further information may be obtained from the manufacturer at the above address.

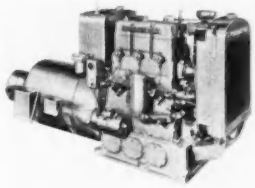
●



RCA Fleetfone Two-way Radio Station

This desk-type Fleetfone station, Model CSF-60A, combines a 60-watt transmitter-receiver and its power supply in a compact cabinet. There is ample room in the cabinet for mounting a line termination panel to permit remote operation of the transmitter. The console may be mounted against a wall if desired, since both transmitter-receiver and power supply units are mounted in an upright position and can be removed for servicing through the top of the cabinet. Equipment permits adjacent channel operation in the 30–50 mc band.

●



New Nordberg 45 hp Diesel Engine

Nordberg Manufacturing Company, Milwaukee 1, Wisconsin, has announced a new three-cylinder Diesel engine, rated at 30 to 45 horsepower within a speed range of 1200 to 1800 rpm. Built to generate light and power the new engine, known as the 4FS3, has a 4½-in. bore and 5¼-in. stroke and is a four-cycle, vertical, mechanical injection Diesel engine. It is available in direct or alternating current models from 20–30 kw in all standard voltages, 50 or 60 cycle. It is built as a complete, ready-to-operate unit for stationary and portable applications and marine auxiliary use. Further information may be obtained from the manufacturer at the above address.

Manila AGAIN PREFERS GAMEWELL

Manila, the capital city of the Philippines, first installed a Gamewell fire alarm system in 1903.

This system, from time to time extended with Gamewell equipment, was completely destroyed during the recent war.

After more than 40 years experience, Manila again purchased a complete fire alarm system consisting of a 38 circuit central station, 14 fire station alarm and recording equipments, and 600 fire alarm boxes. The new system has recently been placed in operation.

TRADE MARK GAMEWELL REG. U.S. PAT. OFF.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

In Canada: Northern Electric Co., Ltd., Belleville, Ontario

Those Who Know Insist On HANNAY HOSE REELS

The Minonk, Illinois, Fire Department's new Ford Fire Truck, made by the Boyer Fire Apparatus Co., Logansport, Indiana, and equipped with the new Hannay Hose Reels.

Check the Superior Advantages

HANNAY *ELECTRIC DRIVE* HOSE REELS

Water Resistant
Vapor Resistant
Explosion-Proof

- ★ Extra strong construction to withstand high pressures.
- ★ Explosion-proof, heavy duty motor protected against fog, foam, fumes and water.
- ★ Sealed push button control.
- ★ Safe rewind speed, always under control.
- ★ Quiet, positive sprocket and chain drive; no gears to shift, no clutch to engage.

....LOOK FOR THIS

The continuing and increasing approval of Hannay Hose Reels by leading manufacturers and major fire departments is sound evidence of their superiority. Progressive fire officials, of large municipal departments and volunteer companies alike, know that when the going is tough there's no time for mechanical upsets . . . and that HANNAY Hose Reels can always be depended upon to do *their* part of the job. Attention to details makes for perfection. Specifying HANNAY Hose Reels is a detail that warrants your fullest consideration.

Ask Your Supplier or Write for Full Details

HANNAY
REG. U. S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

© 1952 C.B.H. & S. Inc.

MANUFACTURERS OF MANUAL AND POWER OPERATED HOSE REELS FOR EVERY PURPOSE

HERE IS *FIREPOWER*

...with a five-way wallop

Being demonstrated here is the powerful JOHN BEAN Model HPV-750 Fire Fighter. This hard-hitting, two-fisted model combines TWO high-pressure and THREE volume lines. The two high-pressure fog lines each deliver 30 gallons a minute at 850 pounds pump pressure . . . while, AT THE SAME TIME, the three 2½-inch lines deliver a total volume of 750 gallons a minute at 150 pounds pressure!

High-Pressure Fog PLUS Volume in the sensational JOHN BEAN H.P.V. Fire Fighters

Here is overwhelming fire-quenching power that hits fast, and hard . . . and sure! The John Bean H.P.V. gives complete protection against all types of fires. High-pressure fog lines, *drawing from their own water supply*, go into action immediately to knock down rural, suburban, residential and business district fires. When volume water supply is available, powerful 2½-inch lines are at hand for controlling conflagration-type fires. You get dependable, all-around fire protection with John Bean H.P.V. Model HPV-750 Fire Fighter meets all the requirements of the National Board of Fire Underwriters, resulting in lower community insurance rates, while retaining all of the minute-man advantages of the original John Bean High-Pressure Fog. Rugged and dependable John Bean H.P.V. Fire Fighters are available in 500-, 600-, or 750-GPM capacities. Write today for all the facts.

Get all the benefits of High-Pressure Fog plus these new volume pump advantages:

- **Trouble-free Pump Operation**
- **Foolproof Automatic Pump Priming**
- **Long-life, Water-cooled Gear Case**
- **Simplified Pump Maintenance and Repair**
- **Maximum Protection for Pump**

JOHN BEAN *TWO-FISTED* FIRE FIGHTERS

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY AND CHEMICAL CORPORATION

JOHN BEAN DIVISION, DEPT. 127, LANSING 4, MICH. • JOHN BEAN DIVISION (WESTERN), 426 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

FIREMEN
60 BATTERYMARCH ST.
BOSTON 10, MASS., U.S.A.

Sec. 34.66 P. L. & R.
U. S. POSTAGE
PAID
Permit No. 766
Boston, Mass.

Tennessee Valley Authority
Technical Library
Knoxville, Tenn.

POSTMASTER: If undeliverable FOR ANY REASON, notify sender, stating reason, on Form 3547.

You **Won't Be Wearing** ***This*** **Kind of a Helmet . . .**

. . . if ***You*** **are a Reader of FIREMEN!**

Here's How to Get Your Subscription:

Every NFPA Member Fire Department may have SIX (6) subscriptions to FIREMEN —at NO EXTRA CHARGE! NFPA Membership for fire departments costs only $12.50 per year.

If MORE than SIX (6) subscriptions are needed for YOUR department, then they may be obtained for ONLY $1.25 each at the time of membership renewal.

To receive FIREMEN every month, then:

Make sure that YOUR department has an NFPA Membership and that SIX (6) subscriptions are included. If so, YOU and every fire fighter in YOUR department can get FIREMEN. Extra subscriptions cost only $1.25 each.

If YOUR department is not an NFPA Member Fire Department, fill out and mail in the application blank below. Include list of SIX (6) or more names of fire fighters who should receive FIREMEN.

MAIL THIS BLANK TODAY!

F-18

NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Street, Boston 10, Mass., U.S.A.
Application for Fire Department Membership in NFPA

Please enroll .....
(Name of individual or organization, rank, title, or business connection)

Paid Fire Department ☐
Call or Volunteer Department Company ☐
Industrial Fire Brigade ☐

City or Town..... **County**.....

Mailing Address .....

.....**State or Province**.....

Fire department organizations and chiefs of fire departments joining NFPA should send mailing list for 6 subscriptions to NFPA FIREMEN magazine. Additional subscriptions cost $1.25 each.

Enclosed $12.50 (Check or money order) ☐
Please send bill ☐